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GAMMA GLOBULIN—Status of Availability for Prevention of Poliomyelitis, Wilton L. Halverson and Robert M. Drake, San Francisco 1

THE GROWING PROBLEM OF SUICIDE, Richard A. Kern, Philadelphia . . . 6

DIFFERENTIAL DIAGNOSIS OF OPERABLE DISEASE OF THE ESOPHAGUS, Benson B. Roe, San Francisco 11

DISEASES AND DEATHS—A Statistical Survey of 40,130 Autopsies at the Los Angeles County General Hospital, 1918 to 1948—Part II, Emil Bogen, Olive View, and Edward M. Butt, Los Angeles 16

INJURIES OF THE MUSCULOTENDINOUS CUFF OF THE SHOULDER, Donald W. Blanche, Los Angeles 20

BIOLOGICAL WARFARE, John Beeston, Los Angeles 25

ATTITUDES TOWARD SPECIFIC THERAPIES, Gerald G. Jampolsky, San Francisco . 29

PSYCHIATRIC CONTRAINDICATIONS TO PREGNANCY — With Reference to Therapeutic Abortion and Sterilization, Jerome M. Kummer, Santa Monica . . 31

THE EXERCISE TEST IN ELECTROCARDIOGRAPHY—Detection of Coronary Artery Disease, M. Frederick Leeds and Stanford S. Kroopf, San Francisco . . . 36

PALM THORN INJURIES—Difficulty in Diagnosis of Late Sequelae, Lewis Cozen and Maxwell Fonda, Los Angeles 40

THE PROGNOSIS IN CATARACT OPERATIONS—A Correlation of Preoperative Appraisal with Results, William A. Pettit, Los Angeles 42

CASE REPORTS:

Tetanus: Two Cases in Immunized Persons, Elvin C. Hedrick, Port Orchard, Wash. 49

Paroxysmal Tachycardia in Early Infancy—Treatment with Large Doses of Quinidine, Arthur J. Moss, Los Angeles, and Robert H. Thompson, Inglewood . 51

EDITORIAL, 52 • CALIFORNIA MEDICAL ASSOCIATION, 55 • NEWS AND NOTES, 59

INFORMATION: Something for Nothing?—Observations on Socialized Medicine in England 61

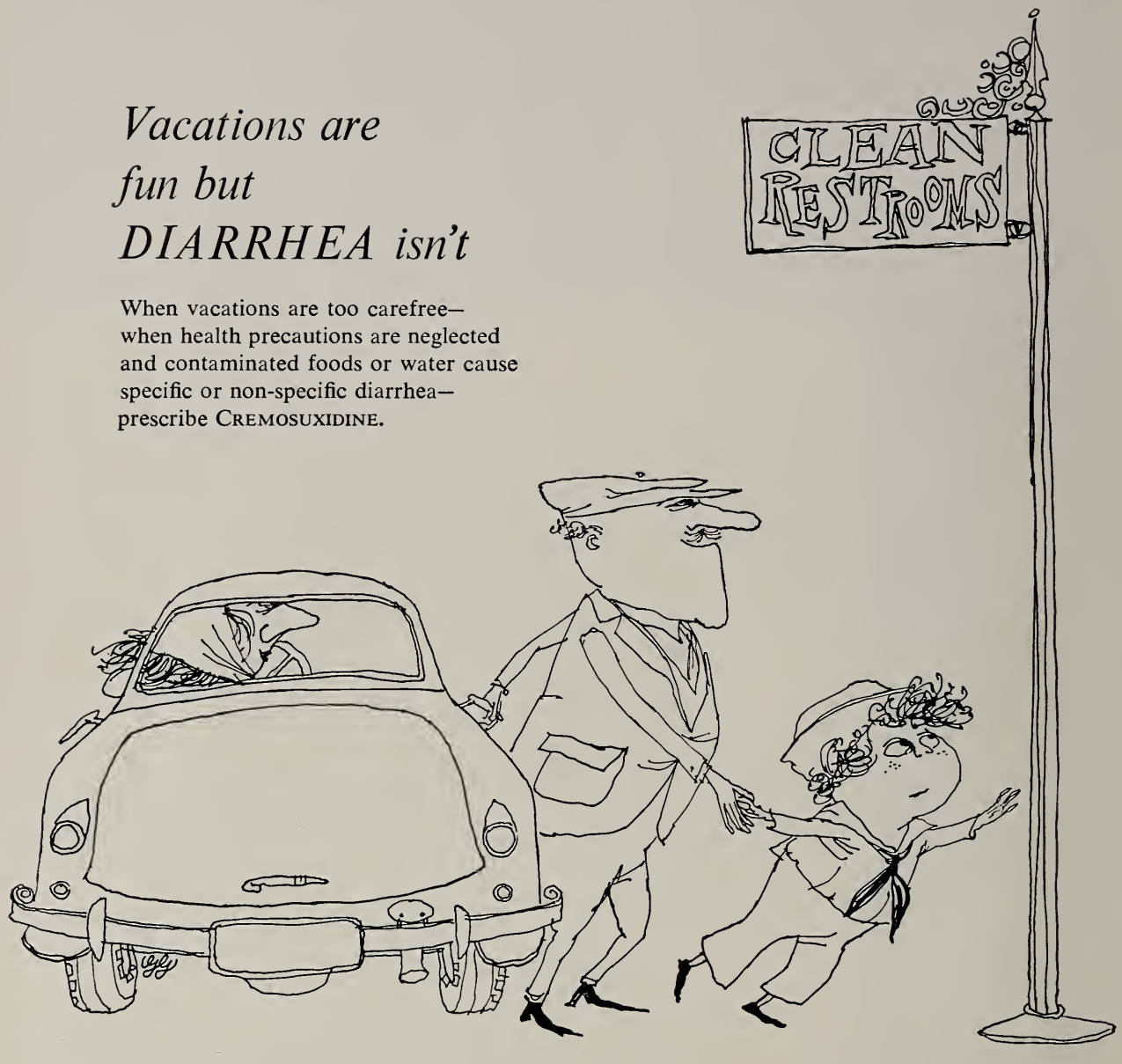
Study of Relations Between Osteopathy and Medicine 65

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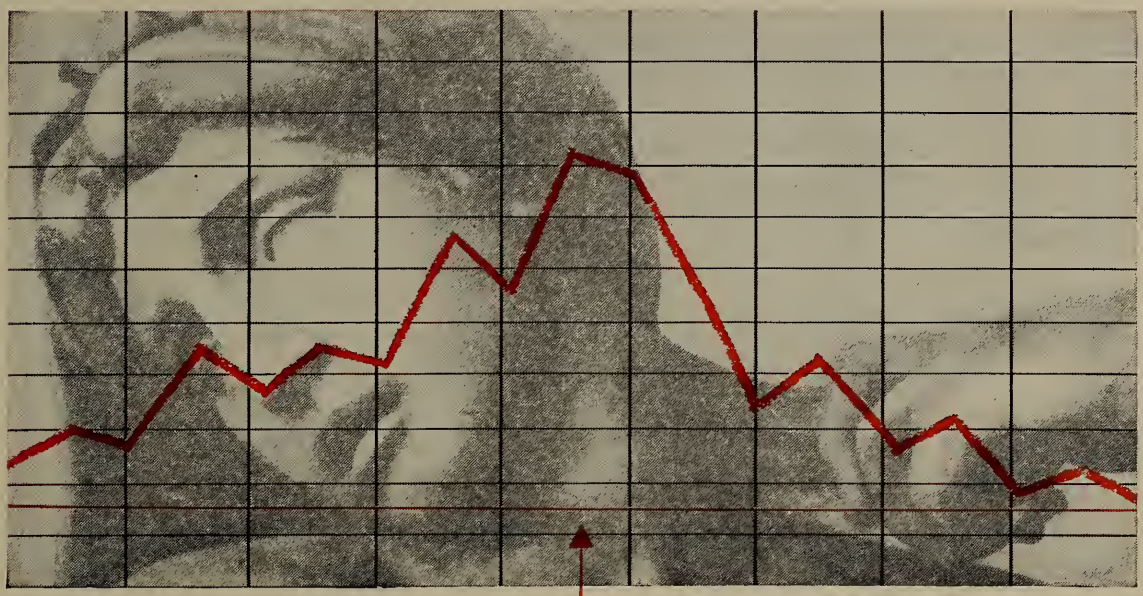
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Tells Nutritional Needs of Nation

Although the nation's progress in nutrition during the last few decades has been outstanding, there still is a critical and definite need of a reoriented nutrition program, in the opinion of Dr. William H. Sebrell, Jr., director of the National Institutes of Health, U. S. Public Health Service, Bethesda, Md.

"This country's major needs in nutrition today are as follows: (1) control of obesity, (2) elucidation of the role of nutrition in the chronic diseases, (3) assessment of nutritional status as a step toward control of borderline deficiencies, (4) means for complete intravenous alimentation and (5) additional knowledge regarding nutrition in the aged, those under stress and those in convalescence," Dr. Sebrell wrote in a recent issue of the *Journal of the American Medical Association*. The article was prepared at the request of the A.M.A.'s Council on Foods and Nutrition.

Obesity, prevalent throughout the world, is the gravest known effect of malnutrition in America today, Dr. Sebrell pointed out. Records indicate that a quarter of the adult population is sufficiently overweight to impair health. Only proper eating habits can effect a lasting result in the correction of obesity, as drugs and appetite depressants are of little or no ultimate value, he stated.

Further studies on the complex interrelation of nutrients within the body must be made, Dr. Sebrell said. Further clinical research also is strongly indicated in the problem of borderline deficiencies—those conditions which present an indefinite clinical picture, but nevertheless one of suboptimal health, he stated, adding:

"Such deficiencies are suspected to result in loss of vigor, retarded growth, low resistance to infection, tooth decay, abnormal births, and other forms of illness and debility. That these conditions are prevalent is unquestionable, but the extent to which malnutrition is responsible is a matter of few facts and much debate."

In an aging population such as is facing the United States today, not only chronic diseases but the aging process itself are of mounting importance in medicine, according to Dr. Sebrell.

"Geriatric nutrition becomes a special interest in view of age-associated changes affecting food intake and metabolism—for example, dental difficulties, diminished digestive and circulatory efficiency, hormonal changes, poor eating habits, and emotional factors," Dr. Sebrell pointed out. "In many older persons, faulty absorption or utilization may increase nutritional needs, notably for protein, iron and calcium."

Conditions of stress such as surgery, injury and bed rest also present special nutrition problems, as does convalescence, Dr. Sebrell stated. Whereas the hazards of these conditions can be averted to some

(Continued on Page 16)

Warn of Severe and Fatal Reactions To Penicillin

As severe and fatal reactions to penicillin are occurring with increasing frequency, use of the antibiotic for trivial infections or non-infectious conditions should be discouraged, in the opinion of three physicians.

In a recent issue of the *Journal of the American Medical Association*, the doctors reported on nine cases of severe side-effects from the drug, five of which resulted in death. The patient suffered such reactions as hives, shock, unconsciousness, asthma, headache, nasal stuffiness, dizziness, nausea, convulsions, cyanosis, weak pulse, drop in blood pressure, difficulty in breathing, vomiting and/or pulmonary edema.

"The severe reaction is usually very rapid in onset and occurs usually a few seconds to several minutes after administration of the drug. Shock, with profound fall in blood pressure, is the most important change. Labored, slow breathing and cyanosis are the rule. Unconsciousness has occurred in most patients and many have had convulsions. Death occurs within the space of a couple of minutes to two hours, and appears to result from shock or asphyxia."

Although in all the fatal cases reported penicillin was administered intramuscularly, there is no reason to believe that the drug administered by any of the other routes cannot be fatal. Virtually any type of penicillin is capable of producing such untoward reactions.

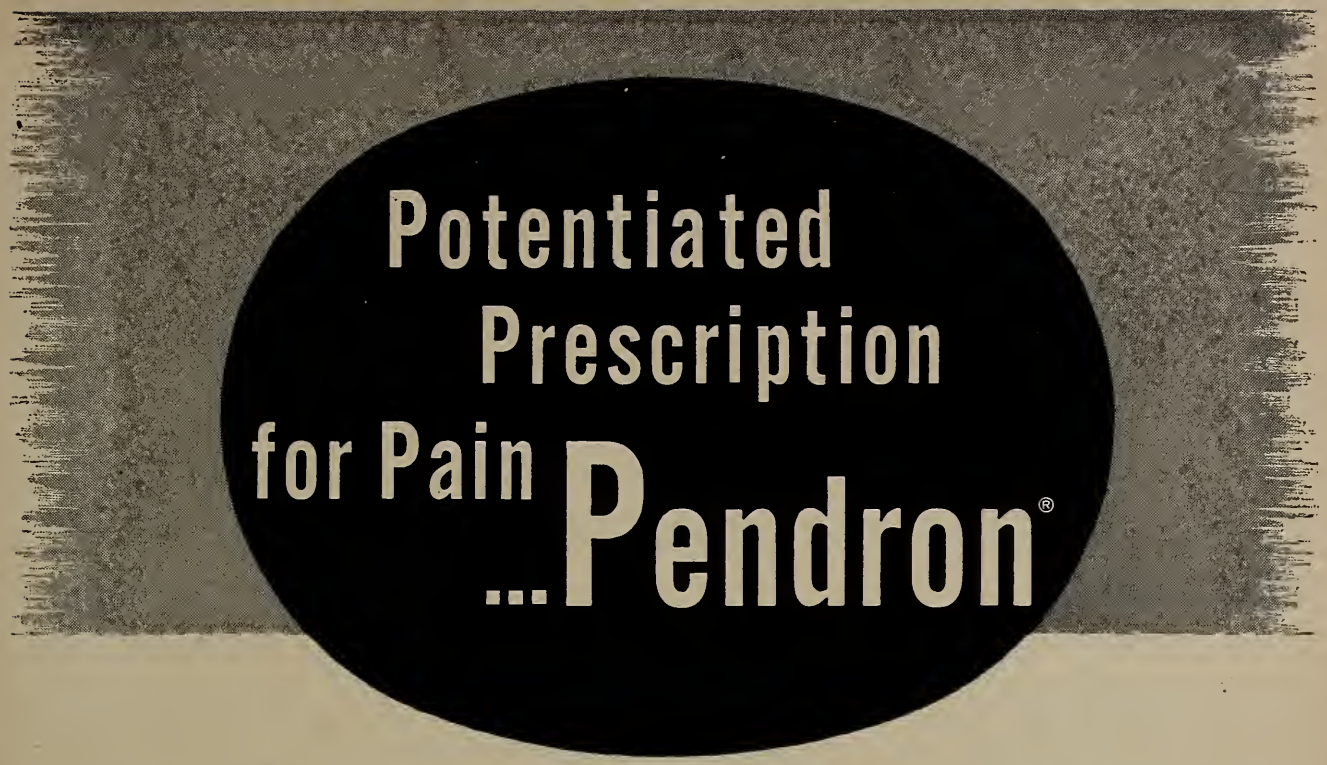
Even though the majority of patients who have had serious side-effects from penicillin had taken the drug previously, such reactions may follow the first administration, the doctors pointed out. Such reactions occur more frequently in those persons who are subject to other allergies, and it is practically a certainty that a skin test will be positive in all those persons who react to penicillin, they stated.

Such profound, dangerous and even fatal reactions to penicillin are preventable in most instances.

"We feel that such untoward reactions are on the increase probably because an increasing segment of the population has had the opportunity to become sensitized as a result of repeated exposure to penicillin," the doctors said.

"For the optimum prevention of this serious allergic hazard the following recommendations are suggested: Penicillin should not be given for trivial conditions; before the drug is administered, the patient should be questioned about his allergic status, his previous use of penicillin, and any unusual reactions to it. It is recommended further that, when more than a few days have elapsed since the previous dose of penicillin, a skin test be made. If the reaction of a skin test is positive, the therapeutic administration of penicillin should be avoided.

(Continued on Page 16)



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Warn of Severe and Fatal Reactions To Penicillin

(Continued from Page 10)

"From the above, it is quite obvious that self-administration of this drug is a hazardous procedure."

The article was prepared by Drs. Samuel M. Feinberg and Alan R. Feinberg, Chicago, and Clifford F. Moran, New York. Drs. Feinberg are associated with the department of medicine and the allergy research laboratory, Northwestern University Medical School, Chicago, and Dr. Moran with the Armed Forces Institute of Pathology, Washington.

Tells Nutritional Needs of Nation

(Continued from Page 10)

extent through elevation of nutritional status, an elucidation of their causes would probably lead to improved techniques, he added.

Nutrition science, through nationwide control of deficiency diseases, has "produced benefits beyond the most optimistic expectations," Dr. Sebrell said, adding:

"Maternal and infant deaths, for instance, have declined to unprecedented levels, a fact for which nutrition can take some of the credit. Similarly,

(Continued on Page 17)

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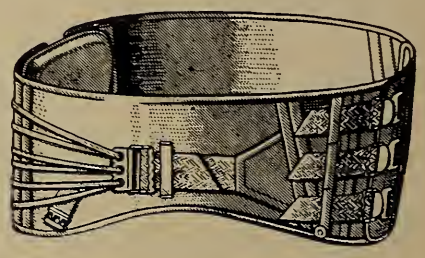
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Tells Nutritional Needs of Nation

(Continued from Page 16)

there have been appreciable increases in the growth of children, and we may note with interest the downward trends in mortality from infections, particularly tuberculosis, that have paralleled the elevation of nutritional status."

However, he stressed:

"A reoriented nutrition program in this country is much needed, with increased emphasis on clinical research aimed primarily at obesity, chronic diseases and borderline deficiencies. In addition, there is a need for intensified research on the special nutritional requirements of the aged and persons under stress.

"In the task ahead, there are critical and definite needs, specific objectives, and our general approach is clear. But the ultimate gains in health and welfare are impossible to predict and may exceed even our hopes."

Dr. Sebrell was the recipient of the 1952 Joseph Goldberger award for outstanding contributions in the field of clinical nutrition. He received the citation particularly for his discovery of the cause, symptomatology and treatment of ariboflavinosis, a vitamin deficiency disease.

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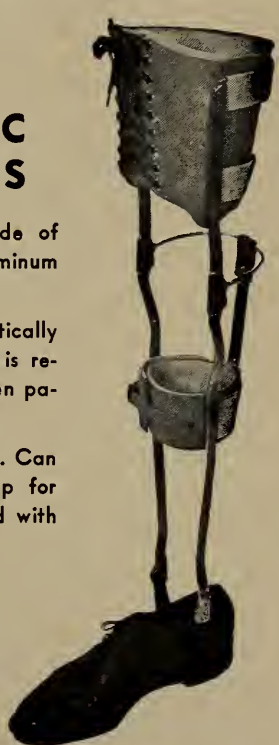
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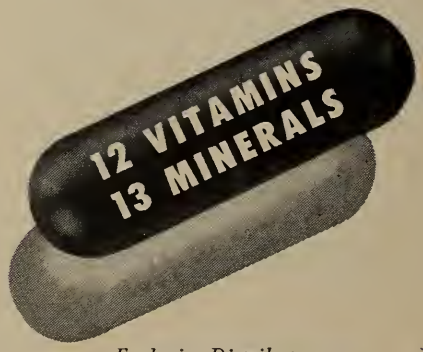
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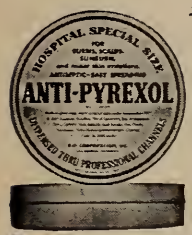
ACTH Aids Treatment of Neurological Condition

Two cases of Guillain-Barré syndrome which responded markedly to intravenous corticotropin (ACTH) therapy were reported in a recent issue of the *Journal of the American Medical Association.* Guillain-Barré syndrome is a relatively rare, paralyzing, neurological condition of unknown origin. It has a significant mortality and an extreme morbidity; there are no specific therapeutic agents.

One article described the effectiveness of the drug in the treatment of a 15-year-old boy suffering from the syndrome. It reported that three days after the use of the drug was discontinued, the boy suffered a relapse. Administration of ACTH again was started, and remission again observed.

The second case described was that of a 22-year-old man who also responded favorably to corticotropin therapy. Like the first case, the patient suffered a relapse upon cessation of use of ACTH. This patient also was treated a second time with the drug, and remission of symptoms again obtained.

One case report was made by Drs. Arthur Blood, William Locke and Ralph Carabasi, New Orleans. The other was made by Lieuts. James A. Newey and Robert I. Lubin (MC) USAF, USAF Hospital, Fairchild Air Force Base, Fairchild, Wash.



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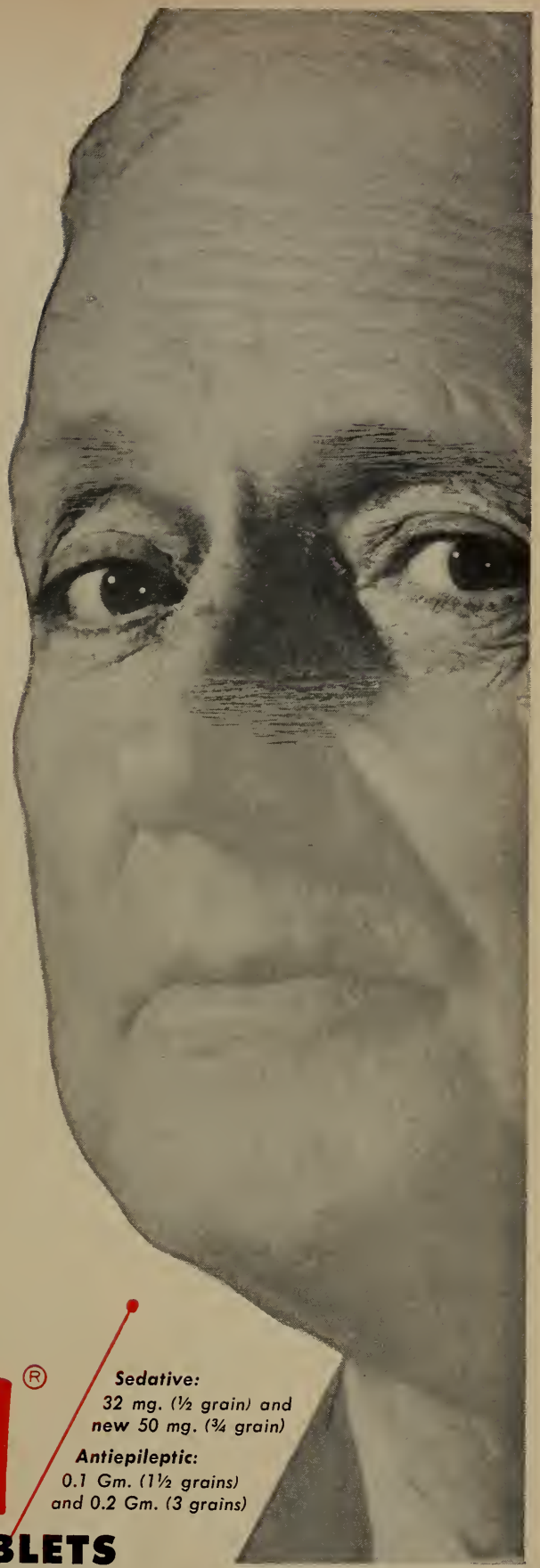
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Exploratory Operation Needed to Diagnose Some Lung Cancers

Early diagnosis and effective treatment of cancer of the lung require in some instances that an exploratory operation be accepted as a means of establishing definite diagnosis of localized pulmonary lesions, in the opinion of Drs. Philip E. Bernatz and O. Theron Clagett, Rochester, Minn.

Although chest x-rays and other nonsurgical diagnostic procedures have proved beneficial in determining some cancers of the lung, positive diagnosis in other cases only can be made by examination of the tissue involved, the doctors wrote in a recent issue of the *Journal of the American Medical Association.*

They reported on 356 cases of persons with localized pulmonary lesions operated upon between April 1947 and December 1951. An exploratory operation was necessary for definite diagnosis in 180 (50.6 per cent) of the patients. Of the 356 patients studied, 203 were found to have cancer of the lung.

"Thirty-seven of the 203 cases were symptomless," the doctors pointed out. "In only one of the 37 cases was the carcinoma inoperable at the time

(Continued on Page 32)



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Exploratory Operation Needed to Diagnose Some Lung Cancers

(Continued from Page 26)

of exploration. On the other hand, in the remaining 166 cases of the 203, there were symptoms from the pulmonary carcinoma and, of these, in 59 (35 per cent) the lesion was inoperable."

The risk of such an exploratory operation is slight, and securing an accurate pathological diagnosis does not require sacrifice of normal pulmonary tissue, the doctors stated, adding:

"There were 11 deaths, a total hospital mortality rate of 3.1 per cent. All the deaths except one were of patients who underwent resection for malignant pulmonary lesions, and, in that one case, extensive pulmonary resection was necessary on a patient one year of age.

"Some patients may believe that they have much to lose if the thorax is explored and a benign lesion is found. They have life itself to lose, however, if a lesion of undetermined nature turns out to be malignant."

Although in 119 of the 356 cases studied by the doctors the lesions were benign, almost without exception they were of types best treated by resection, it was stated. A total of 30 different pathological conditions were found upon exploration.

Dr. Bernatz is a fellow in surgery, Mayo Foundation, and Dr. Clagett is associated with the division of surgery, Mayo Clinic.

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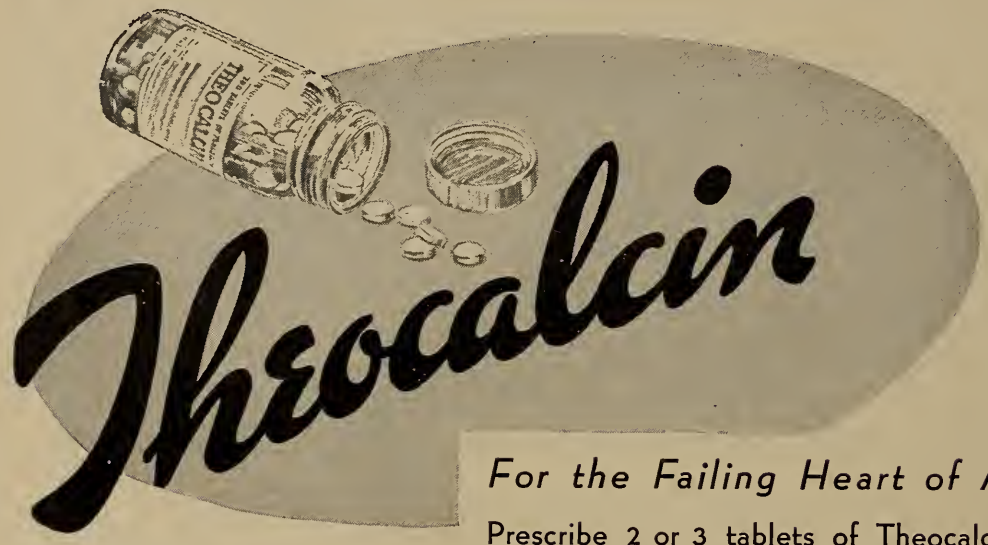


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ACTH Aids in Snake Bite Treatment

Cortisone and corticotropin (ACTH) are valuable adjuvants in the treatment of snake venom poisoning, it was reported in a recent issue of the *Journal of the American Medical Association.*

Three cases in which children bitten by poisonous snakes recovered following cortisone or corticotropin therapy, in addition to standard treatment for such bites, were reported by Drs. William W. Hoback and Thomas W. Green, of the Clinch Valley Clinic Hospital, Richlands, Va.

"We have been impressed by the pronounced decrease in morbidity in these patients, as compared with 11 others seen in the last three years who did not receive cortisone or corticotropin," they stated.

In the three cases described by the doctors, the swelling, pain and elevated temperatures resulting from the bite subsided within a few hours after administration of the hormone drugs. Recovery occurred within a few days.

"The effectiveness of cortisone in these patients is probably due to its remarkable ability to inhibit local tissue reactivity to foreign protein [snake venom] and its symptomatic effects on pain and fever," the doctors stated. "An additional indication for cortisone or corticotropin therapy (not encountered in these patients) is the frequent generalized urticaria from the snake venom and from antivenom, especially in cases in which it is necessary to administer additional antivenom.

"It is noteworthy that all these patients were five years old or younger, and a generally poor prognosis would have been expected, because of their age and size.

"It is possible that in such a situation these agents may be life-saving."

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COSTS (Quarterly)				
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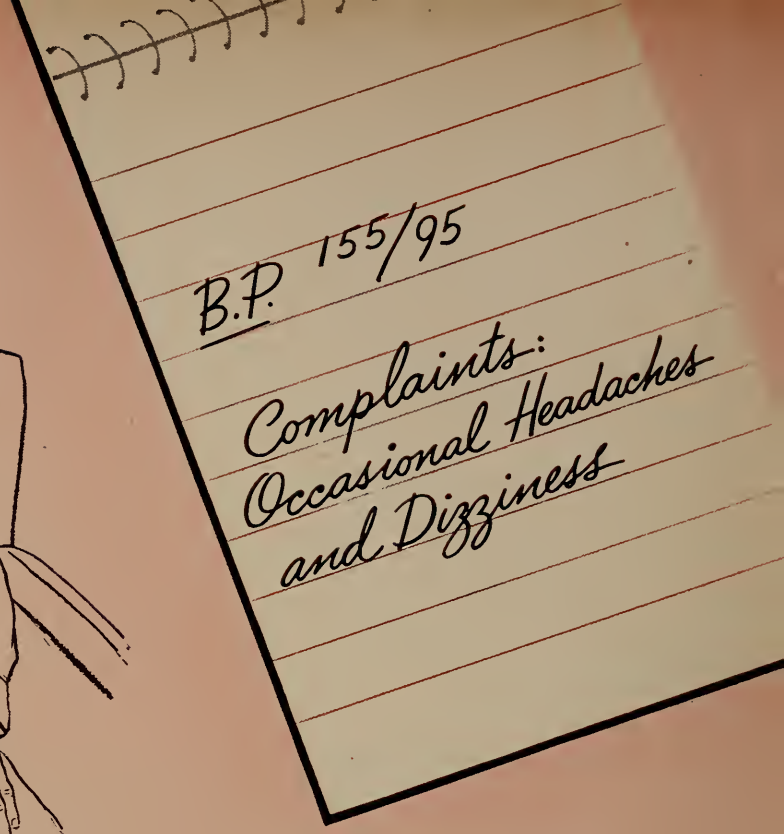
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California MEDICINE

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Gamma Globulin

Status of Availability for Prevention of Poliomyelitis

WILTON L. HALVERSON, M.D., and
ROBERT M. DRAKE, M.D., *San Francisco*

• A limited and temporary preventive effect has been noted for gamma globulin used under certain conditions. There is available a supply of gamma globulin which is inadequate to meet the demand with the methods of use indicated in the light of present knowledge.

All supplies of gamma globulin have been placed under the responsibility of the Office of Defense Mobilization. Supplies allocated to the state of California are being made available to physicians through their local health departments on the basis of past and current incidence of poliomyelitis for use in protecting persons in household contact with patients with diagnosed cases. The most effective use of California's allocation of this material can be expected to prevent or modify approximately 40 cases on the basis of the past five-year experience (1947-1951). Parents, physicians and health officials must know the facts and cooperate to make the best of a difficult situation.

THIS SUMMER parents, physicians, and health departments will be concerned about the availability of gamma globulin for use in the prevention of poliomyelitis. With the intense interest that will undoubtedly develop, it seems timely to review the available facts about gamma globulin and its effectiveness, the possible methods for use, the available amounts, and the plans of interested and responsible groups at national, state, and local levels to use a scarce material in the most fair and effective manner.

Since the major impetus to the use of gamma globulin resulted from the field trials reported by Hammon and co-workers,[7,8,9,10] it would seem desirable to summarize their methods of study and the available results, and to note the features as yet unpublished which may be of crucial importance in the final evaluation of the role of gamma globulin in prevention of poliomyelitis.

Specific criteria and controls were used, in an attempt to avoid mistakes due to biased observations or chance variation. These included: (1) Assuring statistically significant results by including a sufficient number of participants. (2) A randomized procedure for injecting all volunteers, half receiving gamma globulin and half receiving gelatin, without anyone's knowing (until evaluation was completed) which subjects received which material. (3) Final analyses based only on paralytic cases.

To obtain sufficient numbers of cases, areas were selected which were experiencing severe epidemics and, furthermore, which had a large enough population to allow a sufficient duration of the epidemic

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Dr. Halverson is Director and Dr. Drake is Medical Officer of the California State Department of Public Health.

to evaluate this temporary immunizing agent. Populations of 50,000 to 100,000 were found best suited for this purpose. Three areas were selected where there were unusually high rates. In the Provo and the Sioux City studies, the annual morbidity rates, respectively, were 160 and 427 per 100,000 population for all ages. At Houston, the rate for that city and county was 82 per 100,000 population.

Injections were given to children in the age group 1 to 11 years. In all, approximately 55,000 children received injections—half with each material. One hundred and four cases occurred in the study group following these injections. Thirty-one occurred in those receiving gamma globulin and 73 in those receiving gelatin. No significant difference between the two groups was noted in the number of cases developing in the first week after injections (12 in the gamma globulin group, 16 in the gelatin group.) A marked difference was noted between the two groups in the second week (3 in the gamma globulin group and 24 in the gelatin group). The difference persisted through the fifth week after injection but the numbers were increasingly smaller. There was a suggestion of protection in a smaller proportion of children in the sixth through the eighth week after injection.

In addition to the evidence for prevention, in those cases occurring within one week after injection of gamma globulin, there were indications that the severity of the disease was significantly modified.

For the three study areas the average ratio of effectiveness was approximately 2 cases prevented or modified per 1,000 persons who received the injection. This ranged from a low of 0.8 cases per 1,000 in Houston to over over 4 cases per 1,000 who received the injection in the Sioux City area.

In addition to the clinical studies, blood and stool specimens were obtained and epidemiologic data collected. The findings based on these data have not yet been reported. Nonetheless, they may give information indicating whether gamma globulin interferes with natural infections which lead to subsequent immunity. This feature, and additional epidemiologic evidence now being analyzed, are of importance in establishing the eventual role of gamma globulin in this disease.

With the reports emanating from the Hammon studies, concern developed that the demands for gamma globulin would exceed the available supply for the summer of 1953. The Office of Defense Mobilization is the national allocating authority for this material. The total available supply from the various sources has been estimated to be about 6 to 7 million cubic centimeters of gamma globulin by July 1, 1953, which is less than 1 million average doses (0.14 cc. per pound of body weight).

A number of factors limit the value of gamma globulin. It gave only temporary protection in the groups studied by Hammon and not all persons inoculated were protected. (For example, during the week of greatest protection 10 per cent of the cases occurred in those inoculated with gamma globulin.[12]) There is no practical way of determining what person is susceptible or, conversely, immune. There is incomplete information as to what constitutes an effective exposure and there is usually uncertainty as to the time the individual is exposed. Furthermore, it is estimated that there is only one recognized case per 100 or more infections. Yet these undiagnosed infections may well serve as a source of virus. If there were methods for ascertaining easily some of the above unknowns, the available supply of gamma globulin might be adequate. However, with the lack of clear-cut indications for use, it appears that the available supply will be inadequate to meet the demand. Thus, it was necessary to establish some "ground rules," so to speak, so as to insure that the supply will be used in the most effective way for all persons concerned.

Among various proposals, two methods have received the most consideration. Each may be considered complementary to the other. The first is the mass community approach of injecting individuals of the most susceptible ages in areas experiencing severe epidemics. This was the method used by Hammon and co-workers. Advantages and disadvantages of this method have been summarized as follows:[4]

"1. The efficacy of the method has been demonstrated in critical tests to prevent or modify on the order of two cases of paralytic illness by the inoculation of 1,000 children in selected age groups.

"2. By this method, an effort may be made to authoritatively restrict the use of a scarce substance to those individuals and locales where maximum benefit may be obtained.

"On the other hand: (1) Mass use requires advance prediction of areas where high attack rates may be anticipated and such prediction is exceedingly difficult. (2) Mass use is decreasingly efficient as the total attack rate decreases, it is decreasingly efficient in very sharp or very prolonged outbreaks, it is decreasingly effective as use is extended into those age groups at lower risk of illness. (3) To achieve results comparable to those of the field experiments would require the maintenance of a highly organized central body with the authority to make prompt and final decisions, to thoroughly evaluate individual situations in which mass prophylaxis may be employed. (4) With the present estimate of the supply of gamma globulin which will be available in 1953, relatively few and scattered areas would receive allotments for mass pro-

phylaxis. Nevertheless, requests for such allotments would be many and would engender a variety of disconcerting pressures on the allocating body."

A second method involves giving gamma globulin to persons who have been in contact with patients known to have the disease. There is epidemiologic evidence that members of a household or family are at a definitely increased risk of developing recognized illness than are the general public.[4, 10] Table 1 presents an estimate of the numbers involved, the important time relationships, and the degree of possible prophylaxis. Unpublished data collected in California in recent years are in general accordance with these estimates.[3]

Of 1,000 paralytic cases, approximately 50 cases will occur in families secondary to an initial case. Of these, 30 will occur simultaneously or so soon after the onset of the first case that no effect from use of gamma globulin can be expected. Fifteen cases will occur from 6 to 12 days after the first case. These cases may be modified. Only five cases can perhaps be prevented. This appears to be a small effect, but Hammon stated that the results obtained should be equal to or better than those resulting from mass prophylaxis except in severe community epidemics.[10]

In addition to the effectiveness noted, other advantages would appear to exist in using a method related to household contacts. These would include: (1) Distribution of gamma globulin can be made equitable and related to the occurrence of cases during the current season. (2) Distribution of gamma globulin may be carried out through already established administrative channels. (3) Criteria for use of gamma globulin in household contacts are relatively easily defined. (4) Use for household contacts requires a relatively small share of the estimated available supply—leaving some available for other categories of use.[4]

TABLE 1.—*Estimated number of secondary cases in households per 1,000 cases of paralytic poliomyelitis by interval between cases and degree of prophylaxis

Days Interval Betweeen Index and Secondary Cases	Number of Secondary Cases Per Thousand Paralytic Cases	Per Cent Secondary Cases	Degree of Possible Prophylaxis
0- 5 days	30	60	None
6-12 days	15	30	Modification
13-30 days	5	10	Prevention
Total.....	50	100	

*See references 10 and 12.

NATIONAL PLANS

On April 15, 1953, a national plan for the allocation of gamma globulin was issued. Of the available supply, 57 per cent is allocated to states and territories on the basis of past and current experience. Thirty-three per cent is held for mass community use in severe epidemic areas, and 10 per cent is kept as a national reserve for unusual or special situations. The state health officer is responsible for the distribution and modes of use of the portion allocated to each state.

ESSENTIAL ELEMENTS OF THE STATE PLAN

An Advisory Committee was appointed by the California State Board of Health, with representation from the state medical and osteopathic associations, the Conference of Local Health Officers, and technical experts, to assist the Director of Public Health in developing a plan for California. After reviewing the available evidence, the Advisory Committee recommended a plan with two basic premises: First, that the national recommendations be accepted, and second, that the state plan be as specific as possible so as to allow the most effective use of a limited material on a statewide basis.

Ninety per cent of this basic allotment to the state will be distributed to cities and counties on the basis of past and current incidence. A state reserve of 10 per cent will be established for unusual and emergency situations.

Of the 90 per cent portion, one-third will be sent to each city and county where full-time public health departments exist and to the county health officer of counties without full-time health departments. Additional amounts may be had upon request of the local health officer in accordance with the current incidence of the disease in that area. Should additional supplies in excess of the state's basic allotment be received, they will be apportioned to those areas experiencing an increased incidence over the five-year mean (1947-51).

The material is to be available for use in selected household contacts of diagnosed cases. These contacts are those persons 30 years or under and pregnant women of any age. The following features were considered in selecting these criteria:

1. Household contacts of a known case have a greater risk of developing poliomyelitis than the general public.[4, 10]

2. Studies of virus distribution in communities show a concentration in households where cases develop.[6]

3. Ninety per cent of reported cases of poliomyelitis in California for the last five years occurred in the age group under 30 years. Only 10 per cent of the cases occurred in the older age groups which include one-half of the state's population.

4. Pregnant women are at an increased risk of having the disease.[1]

Information to be required from the physician for the obtaining of gamma globulin includes the identification of the case (name, age, sex and address of the patient, the date of onset, and type of disease) and the names, ages, and weights of eligible contacts.

The exact methods of collecting records and distributing gamma globulin will be determined in each local area. It is recommended that physicians and health officers work out these arrangements together. Health officers have agreed that in areas with several health departments serving overlapping population and physician concentrations, methods will be developed to assure the maximum convenience to the physicians and people affected.

A local health officer may send a request through the state health officer for a supply to undertake a mass prophylaxis in the event of a severe epidemic. After investigation and on the recommendation of the State Advisory Committee, this request may be forwarded to the Office of Defense Mobilization. Criteria are being developed nationally for the determination of when an area becomes eligible for such use of gamma globulin.

What can be expected of these methods as applied to California this year? For purpose of illustration, let us consider that California will have an average year of 3,000 cases, and will receive approximately 180,000 cubic centimeters of gamma globulin (18,000 average doses). If California used its entire supply for mass community prophylaxis under conditions as suitable as those reported by Hammon and co-workers, approximately 36 cases of poliomyelitis may be prevented or modified out of the 3,000 cases. Recent California experience, however, makes it seem unlikely that a situation meeting the proposed criteria for mass prophylaxis will ocur. Hammon does not recommend mass community prophylaxis unless an area experiences an annual morbidity rate of 160 or more per 100,000 population for all ages.[10] In the past five years, no county in California has experienced such rates (see Table 2). This discussion is limited to the past five years, since the pattern of incidence appears to have changed from a low endemic pattern with recurrent epidemics to a higher endemic level (see Table 3). As to California cities in the population range from 15,000 to 51,000 (the national plan suggests that cities in this range are the most likely to experience these severe epidemics), it is noted that only six outbreaks with rates over 160 per 100,000 occurred in cities of this size in the past five years (see Table 4). All six occurred in cities which are in metropolitan areas, and for that reason it might be difficult administratively or scientifically to justify selecting such areas for mass community prophylaxis in preference to contiguous areas.

According to Hammon and co-workers, family or household contact prophylaxis after the diagnosis of a case should produce benefits equal to or better than those produced by the mass community methods in all areas except those of the most severe epidemics.[10] Based on an average year in California of 3,000 cases, of which about 70 per cent are paralytic, it is estimated that approximately 40 cases of paralytic poliomyelitis could be modified or prevented by this method. This is essentially the same as would obtain using the mass community technique under the circumstances described by Hammon.

TABLE 3.—*Reported cases of poliomyelitis and case rates—California, 1940-52

Year (Calendar)	Population† July 1 Estimated	Reported Cases	Rate per 100,000
1940 Census	6,980,000	440	6.3
1941 Estimated	7,306,000	237	3.2
1942 Estimated	7,859,000	365	4.6
1943 Estimated	8,428,000	2,655	31.5
1944 Estimated	8,832,000	428	4.8
1945 Estimated	9,148,000	950	10.4
1946 Estimated	9,548,000	2,239	23.4
1947 Estimated	9,864,000	735	7.4
1948 Estimated	10,165,000	6,070	59.7
1949 Estimated	10,434,000	2,623	25.1
1950 Census	10,634,000	2,313	21.7
1951 Estimated	11,100,000	3,198	28.8
1952 Estimated	11,460,000	4,047	35.3

*Source: Morbidity Records, Bureau of Acute Communicable Diseases, California State Department of Public Health.

†Estimates of State Department of Finance—November 1951, p. 14, prepared by Carl M. Frisen.

TABLE 2.—*Poliomyelitis—annual cases per 100,000 population in counties of California, 1948-1952 inclusive

County Population in Thousands	Number of Counties	Total County Years	Case Rates per 100,000 Population: 150+	100-149	75-99	50-74	30-49	15-29	1-14	Too Few for Rates	No Cases
500+	4	20			1	1	5	10	3		
200-299*	9	45		1	1		22	21			
100-199	7	35				4	12	14	5		
50- 99	8	40		2	3	6	7	16	6		
15- 49	15	75		2	3	3	17	24	13	9	4
Less than 15	15	75		1	5	3	7	9	1	23	26
Total	58	290		6	13	17	70	94	28	32	30

*There are no counties with populations between 300 and 500 thousand.

TABLE 4. — *Poliomyelitis—annual case rates per 100,000 in selected cities of 15-51 thousand population, 1948-1952 inclusive*

City Population in Thousands	Number of Cities	Total City Years	Case Rates per 100,000 Population								
			150+	100-149	75-99	50-74	30-49	15-29	1-14	Too Few for Rates	No Cases
45-51	6	30		3		4	9	11	3		
35-44	3	15		1		1	8	1	4		
25-34	9	45		3	6	4	13	10	7	2	
20-24	12	60	3	2	1	15	14	14	6	1	4
15-19	17	85	3	1	8	13	23	25	6	5	1
Total	47	235	6	10	15	37	67	61	26	8	5

With the state plan as adopted, California should benefit from both of these methods. The basic allotment of 180,000 cubic centimeters is to be used for household contacts of persons with diagnosed cases. If suitable epidemics develop, a request can be made for gamma globulin for mass community prophylaxis. As will be noted, the total net effect from either method or both, with the available supplies, will be very small. Only 1 to 2 per cent of all reported cases in the state will be affected by either of these methods. That is to say, on the basis of present information, there will be no effect on the bulk (98 per cent or more) of the reported cases of poliomyelitis in the state.

In using the household contact method, two dilemmas arise at once. First, a rigid definition of "household contact," although it seems necessary to conserve a scarce material for use in a population at definitely increased risk, may sometimes work hardship in a particular situation. Nonetheless, it was felt by the State Advisory Committee that if gamma globulin were used for non-household contacts (and where would the line be drawn among this group?) not only would the supply be quickly exhausted without obtaining any effective results, but the possibility of getting additional data on the effectiveness of this method would be spoiled. Second, the establishment of a diagnosis of non-paralytic poliomyelitis may present difficulties. Especially this is so in the areas where the arthropod-borne encephalitides are endemic.

"There is one subjective disadvantage which should not be overlooked," it was pointed out in a report by the National Research Council.[12] "Some 60 per cent of secondary family cases will be neither prevented nor modified by the use of gamma globulin [since 60 per cent of cases occur within 0 to 5 days of the first case]. Unless physicians and the public are fully informed of this situation, an unjustifiably critical attitude toward the value of gamma globulin may develop. The public will see the failures of prophylaxis; the successes will be hidden from it."

Health officers and private physicians are together confronted with an unusually difficult problem. Not only is gamma globulin in very short supply but in spite of its limitations the public has been led to believe that it is an effective preventive for poliomyelitis. Health officers must therefore work closely with physicians in private practice and constantly keep the people of California informed on the facts regarding gamma globulin and the current incidence of poliomyelitis.

760 Market Street.

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The Growing Problem of Suicide

RICHARD A. KERN, M.D., *Philadelphia*

• *Informed as to the epidemiologic aspects of suicide and as to warning signs, physicians could, by appropriate action, prevent self-destruction in many cases.*

Not only ought each physician's office be a suicide prevention station, but all physicians ought to act in concert to gather data, to carry out a program of public instruction and to enlist the aid of the press in an effort to reduce the ever-increasing rate of suicide.

AN EVER INCREASING number of persons in this country have asked themselves the question, "To be, or not to be?" and have come up with the negative answer, so that today suicide stands eleventh on the list of causes of death. Moreover, true figures would be higher, since there is much false recording because of the social and religious stigma which self-destruction implies. Likewise, suicides made to look like accidents, especially by automobile, in order to collect double indemnity instead of no insurance, far outnumber the few instances in which apparent suicide is actually murder.

Suicide is preventable. It occurs from causes and in circumstances which are overwhelmingly temporary and remediable. Failure of physicians to prevent self-destruction by patients is owing not so much to ignorance of causes as to failure to recognize the signs and symptoms of impending suicide in the course of daily medical practice. Since the suicide rate on the west coast is higher than in almost any other part of the country, the subject is particularly worthy of study and discussion here.

CAUSES OF SUICIDE

The *known causes of suicide* may be grouped (1) as the factors inherent in the patient and (2) the extrinsic environmental factors. In every case factors of both types are involved. If the inherent cause is of great import, it will take little pressure from without to tip the balance, and vice versa.

The chief inherent factor is *mental abnormality*. In 35 to 40 per cent of suicides this is frank psychosis. In another 45 to 50 per cent there is definite psychoneurosis that involves a variety of inner conflicts. In less than 15 per cent does some organic disease contribute an inherent factor adequate to lead to suicide, and even in these cases there is usually just enough of a mental factor to decide the issue.

Fully a third of all suicides have a committable psychosis at the time of self-destruction. In 70 per cent this is a manic-depressive condition in the depressive phase. In the non-psychotic but neurotic patients an exaggerated depression is routinely a part of the picture.

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Guest speaker's address: Presented before the General Meeting at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24 to 28, 1953.

The first point to stress, then, is that the mental disturbance, the depressed state, is in the overwhelming majority of cases a *temporary* one. This means in the first place that if the mental disturbance is recognized and the patient is protected against himself, his suicide can be prevented. It further means that recovery from the mental disturbance can be hastened by treatment appropriate to the condition, ranging from psychotherapy to electroshock. It also means, as the physician and relatives must be made to realize, that the situation cannot be met by reasoning: the suicidal patient can be influenced by suggestion, but not by pure logic.

Here is some evidence to support the thesis that suicide is usually based on a mental aberration. (a) Suicide is the commonest cause of death in all the insane except only in the very aged. (b) The means of self-destruction is often obviously irrational: A patient on the 17th floor of a hospital does not jump, but hangs himself out the window by a cord fastened to the radiator in the room. A woman crawls halfway into a furnace, to be fatally burned when the pilot flame touches off the oil burner. A man drives two 8-centimeter nails into his skull with a hammer. Another injects himself with 2,000 units of insulin. As Menninger[5] pointed out, the method of suicide is more determined by the phantasies of the individual than by the opportunities available. (c) Rarely is insufferable pain a factor, but rather an obsessive hypochondriac concentration on a trivial ailment or an exaggerated dread of consequences: the fatigued brain worker thinks he is going mad; indigestion is magnified into cancer. (d) The depression which precedes the act is far out of proportion to the cause of depression.

Of course there are those who take their lives to escape an intolerable situation:

> . . . The whips and scorns of time,
> The oppressor's wrong, the proud man's contumely,
> The pangs of despised love, the law's delay,
> The insolence of office, and the spurns
> That patient merit of the unworthy takes . . .

In this group there are indeed logical deterrents:

> Whether 'tis nobler in the mind to suffer
> The slings and arrows of outrageous fortune,
> Or to take arms against a sea of troubles,
> And by opposing, end them . . .

Such persons might be argued out of their resolve. Here, too, a moral deterrent may operate:

> For in that sleep of death what dreams may come
> When we have shuffled off this mortal coil,
> Must give us pause . . .

Only in this group are found those who would have been considered wholly "sane" or without psychic taint. As Gruhle[2] pointed out, they are most likely to be the aged: life-weary, lonely, keenly aware of their own decline, faced with enforced idleness and refusing to adapt themselves to changed circumstances. Yet among such persons, too, even in cases of deaths most carefully planned, it is common, as Henderson[3] observed, to find the recent mental aberration which at the last brings the plan to execution.

EPIDEMIOLOGY

The *epidemiology of suicide*, a term aptly stressed by Gordon and co-workers,[1] deals with the collecting and analysis of data about things that tend to *precipitate* suicide, and also those that *defer* suicide in persons so disposed. Much has been accomplished in this field, but much remains to be done in the study of new case material which has had the benefit of modern diagnostic methods. The available facts deserve attention, since they point the way to the recognition of potential suicide and to means of prevention.

Age. There is a steady increase of incidence of suicide from age 5 to 50 in both sexes. Then the rate levels off in women for the rest of life. But in men it continues to rise into the oldest age brackets.

Sex. Three times as many men as women kill themselves.

Race. Four times as many white persons as Negroes are suicides.

At this point distinction must be made between *attempted* and *successful suicide.* More women try than men, more Negroes than white persons.

One must further differentiate between *false* and *genuine suicidal attempts.* The genuineness of an attempted suicide must not be judged merely by success or failure, for success depends to a considerable degree on available methods. In this country 40 per cent of the men who killed themselves used firearms. In Denmark only 2 per cent of males could avail themselves of such means. Women have a tendency to use non-violent methods, such as poisons, or illuminating gas. Such methods, especially barbiturates, are slower acting and give time for applying life-saving measures. *False attempts* are more likely to involve the use of "phony" methods, as when the lady swallows iodine in the presence of her lover. False attempts should not be labelled bungling, since the attempt is often an end in itself: a desperate appeal to society, a means of making contact with the group, as Stengel[6] pointed out.

Season. Suicide is more frequent in May and June in the United States. (In Australia it is January and February.)

Weather. More people kill themselves on clear sunny days with a rising barometer than on dark, rainy "depressing" days.

Climate. Suicides are fewest in the torrid zone, most in the temperate zones; and in this country more in the north than the south.

Day and hour. Suicides are most frequent on Monday and Tuesday, and oftener in the mornings, earlier in the army (5 to 9 a.m.) than in civilian life (10 a.m. to 2 p.m.).

Heredity may play some part in suicide; family certainly does. However, Kallmann[4] reported that if one of uniovular twins kills himself, the other rarely does; this may be because he has lost his rival, but it could also be due to difference of attending circumstances.

SOCIAL FACTORS

Social factors are of manifold and great significance. Aloneness, lack of satisfactory contact, heads the list. Thus, suicide is more frequent in the single than the married, more frequent still in the widowed, and most frequent in the divorced. It is more frequent in the loneliness of crowded cities than in suburbs, or smaller towns where it is hard for a person to be unknown. Suicide is commoner among immigrants than native-born. The rich have a higher suicide rate than the poor. Stengel[6] found that 22 per cent of suicides lived alone, as compared with only 6 per cent of single dwellers in the general population. Suicide is more frequent in prosperous than in bad times, except perhaps for those hardest hit. (One remembers the quip of depression days by the hotel clerk to the prospective guest requesting a room on an upper floor: "Sleeping or jumping?") Business and professional men have a higher suicide rate than laborers, while twice as many physicians kill themselves as do other males. Self-destruction

is more frequent among leaders than those led: for instance, among officers than enlisted men.

As Gordon[1] pointed out, the social acceptability of suicide, and therefore its incidence, varies widely in different parts of the world. In Europe and China, a loss of face makes suicide acceptable, especially in the young. In this country, suicide carries a definite stigma that makes it unacceptable, especially in the young. Yet suicide in the aged is relatively rare in China, while in this country the aged find it more acceptable.

PERSONAL FACTORS

Personal factors are again mentioned in regard to mental make-up, psychic traits and motivation, that may be the cause of an individual's maladjustment in, or his inadequate or abnormal reaction to, society. There come to mind such things as chronic alcoholism; sexual inversion; failure in love, marriage or public service; poor child-parent relations, the chief cause of child suicides that are meant to injure the offending parent. Here there is much room for study, as Gordon has suggested, through pooling of experiences by physicians in a clearing house or commission on suicide.

Closely related to such personal factors is the phenomenon of *psychic contagion*, so frequently observed in the cases of those who kill themselves. It shows itself frequently in the *imitation of method* used by another. If someone jumps off a bridge or takes an unusual poison, there are likely to be imitators in a few days. Even suicide by rubbing the neck across a barbed-wire fence has been copied, according to Walsh.[8] Forty years ago, after a wave of suicide by taking bichloride of mercury, the deletion for a time from newspaper accounts of mention of the drug used was followed by a lessening of such cases. It has even been suggested that an occasional person kills himself with the thought that the newspaper report will deliver him at last from the anonymity of a frustrated life. It would indeed be worth a trial to see if the limitation of suicide notices to minor accounts on an inside page, with no mention made of the method, would result in a lowered suicide rate.

Certainly what people read may be the spark that fires the resolve to self-destruction. Sophocles wrote the tragedy *Ajax* twenty-three centuries ago, but men still die by their own hand after reading it. Goethe in 1774, when on the verge of suicide at 25 because of an unhappy love affair, wrote a book *Die Leiden des Jungen Werthers*, the tragic story of an unhappy lover who ended his life with a pistol. The book was an immediate success, with translations into many languages including the Chinese, and made Goethe famous overnight. Moreover, in writing the book, he ventilated and dissipated his own troubles. But there was a wave of suicides around the world, as love-sick swains blew their brains out while clutching a copy of *Werther*.

There are also important *deterring factors* in the epidemiology of suicide. The rate always falls during *wartime*, perhaps because many men enter military service where their loneliness is set aside by becoming a member of the group. Indeed, suicide among women actually increases during wartime, as a result of introversion, loneliness and bereavement. Suicide decreases during *times of disaster*. In San Francisco there had been an average of 12 suicides a week before whatever it was that happened there on April 18, 1906; there were only three suicides in the two months that followed. Life becomes more precious when it is a struggle to keep it. Troubles, even illness, up to a certain point may strengthen mental balance. Even when trouble is great, religion has made a virtue of affliction (witness the example of Job).

Religion is a most important factor in the incidence of suicide, but its influence can work in either direction, depending on the basic philosophy of the religion and of those who profess it. In the United States self-destruction is least common among Orthodox Jews, next among Catholics, and most common among Protestants and Reformed Jews. But oriental religions place lower values on human life and they even demand suicide in certain circumstances: witness the rite of *hara kiri* in Japan, and of *suttee* in India. When the suicide rate in the United States was 15.5 per 100,000, the figures for Japan and China were 26 and 45 respectively. As Henderson[3] pointed out, in the western world religion and education play important deterrent roles not only by teaching moral principles, but also by fostering a sense of solidarity in the community.

Fear of disgrace can be a potent restraining factor. Plutarch wrote of a strange epidemic of suicide in Milesia among young women who preferred death to matrimony. The epidemic was stopped abruptly by a decree that the body of each suicide should be displayed naked in the market place. In 1875 an increasing suicide rate in southern Europe was halved within a year by the decision of the Catholic Church to deny religious burial in consecrated ground to those who took their own lives. In this connection it is pointed out that the Catholic Church requires a physician's opinion on the mental state of a suicide at the time of his death: religious burial is denied unless (1) the person repented when dying, (2) did not commit the act with free judgment, (3) was of unsound mind at the time, (4) one

of the first three could apply but could not be proved. There is no penalty if a boy be 14, a girl 12, or less.

DIAGNOSIS

The *diagnosis of potential suicide* is based on the application of these cardinal points: (1) *All depressed persons* are potential candidates for self-destruction. (2) Especially *all manic-depressive* patients can be. (3) *All who have once attempted suicide* can do so again, even years later. (4) *Those who speak of suicide*, and to whom the idea of self-destruction seems in the least attractive, must be watched. Those who speak of a fear of suicide are in less danger. (5) Those who have sharply lost interest in things once prized are suspect.

What of those who only *think* of suicide? Here it is important to reassure audiences, especially medical students, to whom one is talking about suicide, that merely *thinking* about suicide is not dangerous. Surveys of student groups, made under cover of anonymity, have shown that 12 per cent have never thought of self-destruction, 8 per cent have thought of it only with abhorrence, but 80 per cent have at some time entertained the question, "To be, or not to be?"

The *warning signals* of suicidal depression have been well stated by Wall:[7] (1) *Depression* with expression of guilt, tension and agitation; (2) *insomnia*, with great concern about it; (3) *severe hypochondriasis;* (4) *fear of losing self-control* and of hurting others and self; (5) *previous attempts;* (6) *suicidal preoccupation* and talk. By strict attention to these premonitory signs in the inmates of a New York hospital, it has been possible to avoid all suicides in a period of five years.

The *depth of depression* may be intimated by loss of appetite, of weight and of sexual desire; by slowing of action and speech; by unwillingness to meet people; by hopelessness; particularly by *agitation* in connection with the preceding ones.

PREVENTION

The *principles of prevention* of suicide follow naturally out of what has been said.

1. The recognition of the possibility of suicide and the steps to prevent it are the duty of every physician, regardless of his field of practice. Every physician's office must be a suicide prevention station.

2. It is every physician's responsibility to give a patient the chance to talk out his troubles. This is the strength of the confessional, as all the clergy know.

3. Physicians should encourage patients to come to them with their troubles, great or small; should not be impatient with them, and in particular should not scold them for bringing up seeming trifles, lest they be scared away from telling of serious troubles when they arise.

4. Physicians should be helpful with suggestions for those who are mildly troubled; especially should reassure them about minor illnesses.

5. Since loneliness leads to unhealthy brooding and introspection, physicians should encourage lonely persons to participate in group activities. Certainly such persons should *not* be sent, "for a change," to some resort where their loneliness is only accentuated.

6. The comforts of religion can be the most potent therapeutic aid.

7. Physicians should promptly refer to a psychiatrist every patient who is in an agitated depression, or who is attracted by suicide or who has ever tried it. If any possibility of suicidal thinking is suspected, the patient must tactfully be asked about it to get his reaction. (If the threat is imminent and the patient refuses to see a psychiatrist or go to a hospital, someone should be told to call the police while the physician holds him in conversation, lest he kill himself upon leaving the office.)

8. The psychiatrist should place such a patient in an institution that provides constant guard as well as active modern psychiatric treatment. Only in lesser depressions may he see fit to take the calculated risk of *not* confining the patient, and that must be the psychiatrist's decision, not that of any other physician.

Some mistakes physicians must not make are to believe that: Those who threaten suicide won't try it; those who have tried one method of self-destruction will try only that method in the future; that emotionally upset persons are safe once they have shown a trend toward recovery (surveillance cannot be relaxed until recovery is complete); that suicide is preventable by an appeal to reason, morality or fear.

Finally, let physicians unite their efforts as a profession to curb the growing problem of suicide. Medical societies have committees and commissions for the prevention of deafness, blindness, infant mortality, and a lot of other things; why not a committee for the prevention of suicide? With such a committee physicians could register single observations that in the aggregate would make a wealth of source material. Through such a committee a program of public instruction that could have far-reaching effects could be carried on. It might be possible even to persuade the Fourth Estate that the news value of suicide is less than that of the lives that could be saved by playing down the lurid details of self-destruction. As a group physicians could both

interest and help the public health authorities in this endeavor which certainly has public health implications, for the public is the loser by 25,000 such unnecessary deaths each year. But whether singly or as a group, the responsibility of physicians is equally clear: to be our brothers' keepers.

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CDA Shifting Blood Procurement to Expanders, Serum Albumin

A SHIFT IN PROCUREMENT from blood plasma to serum albumin and plasma expanders has been announced by Federal Civil Defense Administration which said the change is due primarily to recent "satisfactory completion of extensive field experience with expanders." FCDA's stockpile goal now calls for 7.5 million shock treatment units: 2 million units of plasma or other blood derivatives and 5.5 million units of plasma volume expanders. The agency reported it already has on hand over 1 million units of the expander PVP (polyvinylpyrrolidone) and is buying quantities of dextran.

The change in FCDA procurement followed a recommendation of the National Research Council that FCDA and Defense Department use plasma only in an emergency when approved expanders or serum albumin are not available, because plasma carries a potential risk of hepatitis. However, FCDA stressed that it has not reached its plasma goal and that blood donations under the National Blood Program are still essential.

FCDA's stockpile program is predicated on a mass attack with modern atomic weapons resulting in 5 million living casualties. It is estimated they would require 7.5 million units of plasma, serum albumin or plasma expanders as well as 7.5 million units of whole blood. The whole blood would have to be obtained by large-scale emergency blood collections.

—A.M.A. Washington Letter

Differential Diagnosis of Operable Disease Of the Esophagus

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ALTHOUGH OPERATIVE TREATMENT of esophageal disease has progressed during the past decade from a nearly impossible to a routine task, differential diagnosis is made difficult by the fact that the esophagus throughout its length lies in intimate contact with numerous vital structures which may become involved in the disease process and may be endangered by operation or diagnostic procedure. Among the most important of these organs are the trachea and bronchi, the pericardium, heart and major vessels, the vagus nerve and its recurrent laryngeal branches, the phrenic nerve, the thoracic duct, the pleural spaces and the structures in the neck.

Clinical signs of involvement of any of these structures may be useful in localization of the disease or in determining its extent but, of course, a heavy price may be paid for this evidence. It is worth remembering that the esophagus is much less mobile and less distensible than the rest of the gastrointestinal tract, and that there is no serosal outer coating. Malignant lesions seem to occur most frequently at the three areas of natural stenosis which are also the commonest sites of stricture, of perforation and of lodgment of foreign bodies. These are (1) cricopharyngeal constriction at the esophageal introitus in the neck, (2) aortic constriction at the level where the aortic arch crosses anterior to the esophagus, and (3) diaphragmatic constriction where the esophagus penetrates the diaphragm.

DIAGNOSTIC SIGNS

Physical examination in esophageal disease is unfortunately of limited value and it is necessary to lean heavily on special studies. Inspection and palpation are impossible except to a very limited degree in the neck. Symptoms are very likely to be misleading in the early stages of the disease, but they are the indications upon which further examination can be made.

Dysphagia is of course the most common symptom but frequently patients with severe disease have surprisingly little difficulty or pain in swallowing.

Pain, if any, is usually felt in the paravertebral area, at the middle or higher in the thorax.

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• The time interval between ingestion and regurgitation and the stage of digestion in regurgitated food may be factors helpful in diagnosing disease of the esophagus. In most cases diagnosis can be made by x-ray alone, but where x-ray evidence is insufficient esophagoscopy is often justified.

X-ray investigation for foreign bodies should include films of the neck. Cough is a common symptom of the presence of foreign bodies; obstruction may result from inflammation or edema.

Perforation is most often caused by foreign bodies or by instrumentation. Esophagoscopy is hazardous in this condition and the findings are not likely to affect the course of treatment.

Hiatal hernia, although probably occurring to some degree in 10 per cent of adults, seldom causes symptoms. Inflammation resulting from hernial obstruction may be mistaken for carcinoma.

Esophageal carcinoma occurs most frequently in elderly persons and in men more than in women. Operation is necessary in many cases to prevent starvation. The postoperative mortality rate is as low as 11 to 24 per cent, and the proportion of five-year survivals is increasing.

Achalasia or cardiospasm can generally be recognized by x-ray appearance. Bouginage is the usual treatment, but operation may be necessary.

Late regurgitation of food is a common symptom of esophageal diverticulum.

Atresia in a newborn infant is a dangerous condition. The effect of any of the four types of anomaly is the same: diversion of fluids from the stomach to the bronchi. Coughing, choking and cyanosis are the common symptoms in a newborn infant.

Hematemesis may arise from a number of causes; esophageal hemorrhage most commonly is owing to varicosity from portal hypertension. Esophagoscopy is the quickest and safest method of determining whether hematemesis is of esophageal origin.

Regurgitation occurs in complete or partial obstruction. It is most important to note the stage of digestion of the regurgitated food and the interval since ingestion. Early regurgitation without acid may indicate esophageal obstruction without dilation (as caused by tumor, inflammation or a foreign body), but in the presence of achlorhydria the regurgitated material cannot be distinguished from stomach contents. Late regurgitation without acid but with some fermentation is suggestive of low esophageal obstruction with dilation above it, as in achalasia. Late regurgitation following the successful ingestion of more recent food indicates storage in a diverticulum. If acid is regurgitated with the food it is more likely that the disorder lies below the esophagus.

Roentgenological examination is always necessary for diagnosis and localization of esophageal disease and in a large majority of cases is the only procedure necessary for accurate diagnosis. Plain films may show a mediastinal mass and may indicate displacement or involvement of other thoracic structures. Contrast study with barium and visualization of motility by fluoroscope are essential for differentiating extrinsic disease and establishing the character of obstruction.

Esophagoscopy, either for direct visualization or for securing a specimen for biopsy, is clearly a very useful procedure and in many cases is the only method of establishing the diagnosis. In skilled hands it entails no great risk or discomfort, but it is not without hazard, and the necessity for it should be carefully considered. If esophagoscopy is done in contemplation of an operation, it is probably in the patient's best interest that it be done by the surgeon who is to operate, for it is to him that the information derived is of greatest value.

FOREIGN BODIES

Foreign bodies of every description have become lodged in the esophagus. When there is sudden dysphagia and mid-back pain on swallowing an unusual object, the patient makes his own diagnosis. The physician is called merely to verify that the object remains, to localize it, and to remove it. The problem is not always so simple, however, because the initial symptoms may be fleeting and mild; children in particular can have minimal discomfort and may be unable to describe their symptoms. Irritating but non-paroxysmal cough of sudden onset may be a symptom; it can be caused either by esophageal overflow into the trachea or by pressure of a foreign object on the trachea through the esophageal wall. In some cases the diagnosis is not made until days or weeks later, when complications arise: Esophagitis with fever, pain in the neck and paravertebral tenderness may have severe systemic manifestations; edema, perhaps with abscess formation, may cause obstruction if the foreign body itself did not.

Most foreign bodies can be observed by x-ray with or without contrast medium. It is important to remember that over half of such objects become lodged at the cricopharyngeal level, and nearly a third at the diaphragm; radiological search, therefore must include films of the neck as well as oblique films of the posterior mediastinum. Esophagoscopy is indicated when x-rays are inconclusive and symptoms are suggestive. The late sequelae of unremoved foreign bodies are serious enough to offset the inconvenience and discomfort of this procedure.

PERFORATION

Esophageal perforation with mediastinitis can be caused by a foreign body, trauma, inflammatory or malignant process, or esophagoscopy. Seybold and co-workers[3] reviewed the experience at the Mayo Clinic and found that two-thirds of the perforations were caused by instrumentation (endoscopy or bouginage); the remainder were caused by foreign bodies except for a few cases of spontaneous rupture or external trauma.

The first manifestations may be pain in the neck and tenderness along the sternocleidomastoid muscle, or high fever and severe systemic symptoms. Mediastinal widening seen by x-ray and/or subcutaneous emphysema verify the suspicion. Esophagoscopy in perforation is hazardous and is usually not indicated if this condition is suspected, as the decision for surgical or conservative therapy is not likely to be altered. If a foreign body remains, however, it should be removed by this method whenever possible.

HIATAL HERNIA

Hiatal hernia is probably a more common entity than the incidence of clinical cases would suggest. As radiologists routinely invert patients for upper gastrointestinal studies many asymptomatic cases are discovered (reports suggest that as many as 10 per cent of the adult population have some degree of herniation). Unfortunately, however, the condition is sometimes overlooked. The typical symptoms —epigastric distress, bloating, belching, anorexia, loss of weight and retrosternal pain—lead in many cases to a suspicion of peptic ulcer, gallbladder disease or even coronary thrombosis. Those unfortunate patients in whom routine studies disclose some abnormality in support of another diagnosis may be subjected to unavailing gastric resection, cholecystectomy or severe curtailment of activity. The "classic" history that symptoms occur when the patient reclines and are relieved on standing is in fact

relatively uncommon. Regurgitation of stomach contents through the displaced cardia may produce esophagogastritis and ulceration—often associated with duodenal ulceration. Thus symptoms sometimes are partially controlled by having a patient follow the usual regimen for treatment of ulcer, without establishing the correct diagnosis.

Not infrequently hiatal hernia is the source of gastrointestinal bleeding. The presenting problem may be asymptomatic anemia, episodes of massive hematemesis, or even melena. For differential diagnosis, therefore, it may be necessary to consider the entire range of gastrointestinal disease from esophageal varices and peptic ulcer to lower bowel neoplasm. Because hiatal hernia is so often an incidental finding of no consequence, it is necessary to rule out other sources of bleeding before subjecting the patient to operative repair.

There are two main types of hiatal hernia. The relatively rare so-called para-esophageal type is less likely to cause symptoms save for extreme cases of the kind popularly termed "upside down stomach." In such cases much of the upper abdominal viscera may be inverted into the left side of the chest cavity. The esophagus is normal and the cardia is below the diaphragm, but the fundus of the stomach extends with a peritoneal sac into the chest through a separate defect in the diaphragm. For that reason, this is not a true hiatal herniation and were better called "parahiatal." The other type is a sliding hernia through an enlarged esophageal hiatus. The cardia is displaced upward and the stomach wall forms one side of the hernial sac. Retraction of the esophagus often develops, but at operation the cardia can be drawn down beneath the diaphragm, justifying therefore the designation "acquired short esophagus." In other cases there is so much permanent retraction—perhaps from inflammatory scarring—that the cardia cannot be replaced; this condition is arbitrarily labelled "congenitally short esophagus." As reports indicate that in experienced hands a progressively higher percentage of such malformations are reducible, true congenitally short esophagus is probably quite rare.

The most important point in differential diagnosis by x-ray and esophagoscope is the frequent similarity in appearance between inflammatory obstruction and carcinoma. A negative finding at biopsy is not always reliable and sometimes the diagnosis cannot be established except by operation.

NEOPLASMS

Esophageal carcinoma has insidious onset and is usually not discovered until obstructive symptoms arise. About 85 per cent of the cases are in men and more than half are in persons over 65 years of age. The diagnosis should be suspected in any patient, particularly an older person, who has difficulty in swallowing solid foods. By a swallow of barium, in many cases, a mucosal defect may be shown which is sufficient for definitive diagnosis. Esophagoscopy for visualization and biopsy of the tumor should be done when any uncertainty exists. Obstructive symptoms also occur, of course, in stricture, hiatal hernia, and cardiospasm, but usually the differentiation by x-ray is not too difficult. Early evidence of metastatic disease may be manifest in supraclavicular nodes and it has even been suggested that routine biopsies of this area be done even if no nodes are palpable.[2] Recurrent laryngeal nerve paralysis, as evidenced by hoarseness, or phrenic nerve paralysis, as observed fluoroscopically, may be grave indications of disease extension, but probably in themselves should not be taken as proof of inoperability, since pressure alone can produce paralysis without actual invasion of the nerve.

Many patients with esophageal carcinoma are in poor condition for major operation because of advanced age, commonly associated with cardiovascular disease, and severe nutritional depletion. The considerable risk is justified, however, merely as the most satisfactory method of preventing imminent starvation and prolonging life, particularly now that the operation in experienced hands has a mortality rate of 11 to 24 per cent, depending on location of the lesion. A gratifying increase in the proportion of three-year and five-year survivals[4] makes the large effort even more worth while.

Benign neoplasms of the esophagus are strangely quite rare compared with malignant growths. Lipomas, fibromas, papillomas and leiomyomas are usually smooth and not too difficult to distinguish either by x-ray or esophagoscopically.

ACHALASIA

"Cardiospasm"—better called achalasia—is a difficult problem about which there is considerable disagreement as to both cause and treatment. The diagnosis is suggested by regurgitation of undigested food which has been retained for some time. Often the esophagus becomes immensely dilated, redundant and atonic. The typical x-ray observation of a wide fusiform or tortuous mediastinal shadow with air-fluid level is not usually mistaken for anything else. Secondary inflammation is rare, but when it exists esophagoscopy and biopsy are necessary to rule out the possibility of obstructing malignant lesion at the cardia. Operation should be considered only in the 10 to 20 per cent of cases in which no improvement is obtained with dilatation by bouginage. The long-term operative results do not at present warrant routine operation.

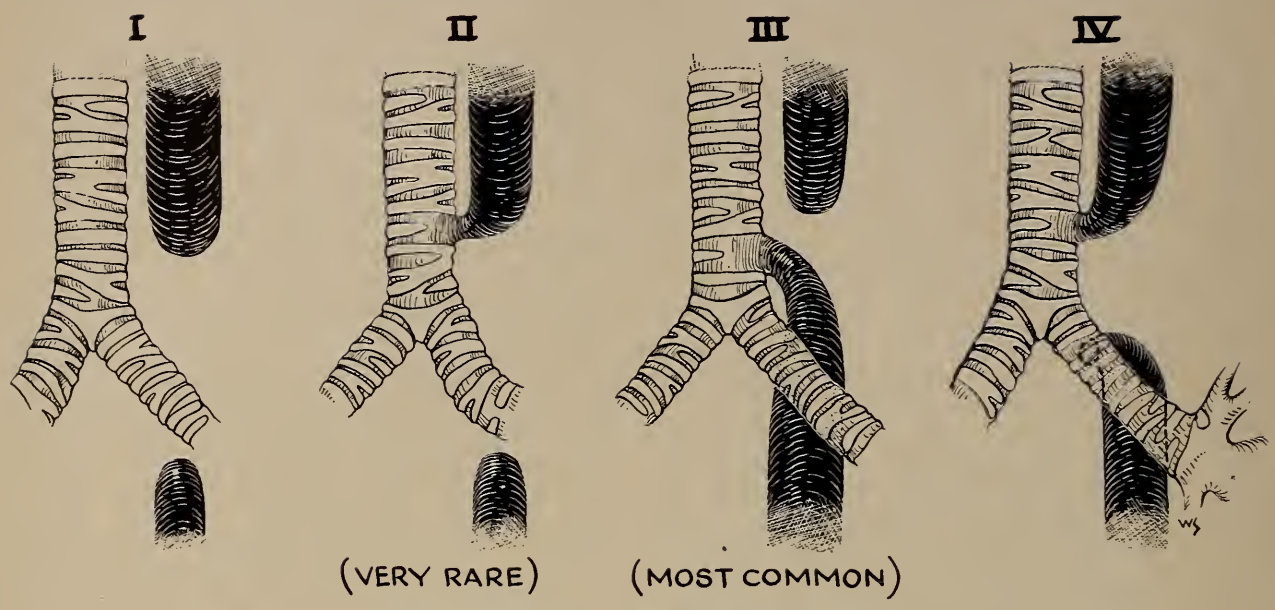


Figure 1.—The four types of esophageal atresia.

DIVERTICULUM

"Pulsion" diverticulum arises as an outpouching through a congenital defect in the posterior pharyngeal musculature, and thus is not truly esophageal in origin. If the cricopharyngeal muscle at the esophageal introitus does not relax sufficiently, the powerful swallowing mechanism may build up abnormal pressure in the pharynx. Such a diverticulum usually is noted on the left side of the neck as an inconstant tumor in which a splash may be heard on succussion. The path of swallowed food is always first into the diverticulum until the space is filled. Food may remain in the sac for some time and be regurgitated hours or days later. A rare form of pulsion diverticulum occurs just above the diaphragm and may at first be mistaken for a posterior mediastinal tumor. The correct diagnosis is suggested by the presence of air or the pooling of barium in the mass.

"Traction" diverticulum is rare, small, and usually completely asymptomatic. It occurs commonly in the hilar region when an inflamed node becomes adherent and subsequent esophageal motion pulls out a pocket.

CONGENITAL ATRESIA

Prompt diagnosis of congenital esophageal anomaly in newborn infants is essential, for the chance of survival drops rapidly after 24 to 48 hours. Atresia, with or without fistulous connection to the trachea, is the only important possibility, and should be considered in any baby with coughing, choking, and cyanosis before the less urgent (but more publicized) circulatory anomalies are sought. The four types of atresia are represented in Figure 1. In each type the diversion of saliva and swallowed liquids from the esophagus results in tracheal aspiration and eventually bronchopneumonia; if the esophagus has a blind upper end the overflow has the same effect as when the esophagus empties into the trachea.

The diagnosis is, of course, made by x-ray, and often sufficient evidence can be derived from the air shadows in a single plain film. When uncertainty exists, it is a simple matter to pass a very small catheter into the esophagus and instill 1 or 2 cc. of Lipiodol® to outline the fistulous tract or blind pouch. Barium should never be used because it does not empty readily from the bronchi and usually leads to fatal pneumonia. The presence or absence of air in the intestine is important in establishing the type of fistula. A blind lower esophageal segment results in complete absence of intestinal air, whereas a fistula from the trachea to the lower esophagus is often associated with a large amount of bowel air which is forced into the stomach during crying.

Multiplicity of anomalies must be kept in mind also; Brown and Brown[1] reported associated anomalies in 8 of 21 cases of tracheo-esophageal fistula. Atresia of Type III (Figure 1), for example, can

readily be overlooked in the presence of coincident imperforate anus which might seem to be adequate cause for gas in the bowel and regurgitation.

HEMATEMESIS

The differential diagnosis of hematemesis deserves special mention in the discussion of esophageal disease. This distressing condition can lead to fatal exsanguination, and sometimes the only hope for survival lies in prompt surgical intervention. A successful outcome may depend on rapid and certain localization of the source of bleeding for the correct approach. It is important to rule out esophageal disease before undertaking emergency laparotomy for presumed gastric or duodenal hemorrhage. Hiatal hernia can cause massive hematemesis, as can carcinoma; but by far the most common cause of major bleeding in the esophagus is varicosity from portal hypertension. The latter diagnosis may be suggested from the history or from clinical signs of cirrhosis, but the presence of varices should nonetheless be proved. This can be done by x-ray studies in many cases, but a negative finding is not always reliable, particularly during hematemesis. Preoperative esophagoscopy is therefore recommended as a quicker, safer and far more certain method than manipulation on an x-ray table when operation is planned.

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VA Abandons Hope of Collecting on "Exclusion Clauses"

VETERANS ADMINISTRATION apparently is convinced that hospital insurance plans cannot be forced to drop "exclusion clauses," provisions which relieve the insurer of liability for payment to VA hospitals. VA's position was stated in a letter by Vice Admiral Joel T. Boone, chief medical director, to Rep. Alvin M. Bentley (R., Mich.). Adm. Boone described various ways in which hospitalization policies were able to exclude payments to VA for non-service connected cases, and other factors that made it difficult for the agency to collect from insurers. He added:

"It is safe to say that most of the policies currently being written contain some of these or similar exclusion clauses. There is nothing illegal about this. The parties have a right to contract as they please. No state insurance commission, or other regulatory body, or governor, would have any legal authority to require such insurance companies to insure a risk they do not want to insure."

This announcement followed various unsuccessful attempts to force state officials to outlaw VA "exclusion clauses." Earlier VA had announced that it would make no further effort to collect on policies carrying such clauses.

—A.M.A. Washington Letter

Diseases and Deaths

A Statistical Survey of 40,130 Autopsies at the Los Angeles County General Hospital, 1918 to 1948

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This is Part II of an article in two parts. Part I appeared in June 1953

Part II

• The 215,468 diagnoses recorded in 40,130 autopsies on patients treated at the Los Angeles County General Hospital during the 30 years between 1918 and 1948 were reviewed and tabulated. The primary causes of death as determined by the pathologists in these cases were recorded and the incidence of death from each disease in relation to the number of cases in which each occurred was computed. The age, sex and race distribution of patients examined postmortem and the incidence and fatality rates from various pathological conditions changed greatly during the period, owing to many factors, among them changes in elements of the population served by the hospital, an increasing incidence of older patients, and medical triumph over some formerly formidable diseases.

No one knows better than a pathologist the fallibility of postmortem examination even when most diligently and expertly carried out. Functional changes may leave no traces and well established disease entities may exist without detectable pathologic alterations. Certain diseases may be recognized only by special techniques which are not applied in routine autopsy examinations. Microscopic section often leads to addition, deletion, or change in the gross anatomical diagnosis. Only too seldom are special histologic, chemical and bacteriologic methods used to confirm, refute, alter or supplement the findings of gross and microscopic autopsy examinations. Nevertheless, clinicians and pathologists agree that the findings at autopsy examinations give the most complete and reliable information available as to the presence of various pathologic conditions at the time of death, and thus furnish valuable information regarding the incidence and severity of different diseases.

Millions of autopsy examinations have been made all over the world since the time of Morgagni. Many reports based on them have been published, but most of them have been confined to certain particular conditions. There is a paucity of tabulations of the over-all frequency of all diagnoses made in large series of autopsies, and most of those that are available are based upon conditions in other countries, or in earlier years, before the development of modern medical science.

The monumental study of 3,000 autopsies in San Francisco between 1900 and 1923 by Ophuls[9] is the largest and best known investigation of this kind of material in this country. It is now more than a quarter of a century since that study was made and many changes in disease, as well as in the methods of study, have occurred in the interval. An analysis of a much larger and more recent series of autopsies at the Los Angeles County General Hospital therefore has been attempted.

Autopsies have been performed at the Los Angeles County General Hospital for over 60 years. Of the 1,168,139 patients admitted in the period 1918-1948 inclusive, 112,409 died in the hospital; and autopsy was done in 40,130 (36 per cent) of the cases in which death occurred. Full records of all those autopsies were available. There were, altogether, 782,900 deaths in the entire county during the same period. (The population meanwhile was increasing from less than one million to more than four million.) The decrease in the general mortality rates in this county, from more than 15 per hundred thousand in 1918 to less than 10 in 1948, was accompanied by a decrease in the ratio of hospital deaths to admissions annually, from over 12 per hundred to less than 9 per hundred in spite of the increasing average age both of the general population and of patients admitted to the hospital.

Although altogether about 20 per cent more patients were admitted and died at the hospital in the period 1918-1937 than in 1938-48, there were about 20 per cent more autopsies during the latter period. In the first decade of the 1918-1948 period, autopsy

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was done in less than 25 per cent of cases in which patients died in the hospital; in more recent years it was done in almost 50 per cent.

With the aid of grants from the Los Angeles County Tuberculosis and Health Association and the California Tuberculosis and Health Association, and the help of a score of volunteer workers, these autopsy records have been reviewed. All records were reexamined by a pathologist, and the diagnoses and the primary causes of death scrutinized and codified according to a special classification developed in 1930 by Evans and Brown[8] and their associates for use in tabulating and classifying autopsy diagnoses. A recent revision of this classification has been cross-indexed to the Standard Nomenclature of Diseases and Operations of the American Medical Association especially for use at the Los Angeles County General Hospital. For this study the data were also retabulated according to the sixth International List of Causes of Diseases and Death, adopted by the World Health Organization in 1948.

The 40,130 autopsies at the Los Angeles County General Hospital during the past 30 years were performed by a large number of persons, which gives objectivity to the statistical results. Numerous papers have been published on selected groups of patients and on particular conditions found at autopsy at the Los Angeles County General Hospital. Many of these are bound in the collected publications of the pathology department in the Los Angeles County General Hospital Library. A study by Swartout and Webster[10] comparing antemortem and postmortem diagnoses in 8,000 cases from 1933 to 1937 showed the variable frequency with which errors of excess and omission occurred in different conditions. Bullock and Edmondson[5] described 22 cases of pancreatic lithiasis found in 35,000 autopsies, in 1948. Extensive studies of intracranial pathologic changes by Courville[7] and of pulmonary cancer by Steiner[11] were also based on this material. Various special studies,[1, 2, 3, 4] especially with regard to the tuberculous lesions found in this review, have already been published, and a number of others are now under way.

The records of the 40,130 postmortem examinations performed at the Los Angeles County General Hospital between 1918 and 1948 reflect great changes that occurred during that 30-year period. Data on age, sex and race distribution changed in accord with changes in the character of the growing population of the county and changes in factors with regard to the kinds of patients admitted to the Los Angeles County General Hospital. Autopsies were done in a higher proportion of cases on some of the services than on others and in some groups of patients than in others. Therefore the data are not representative of a cross-section of all deaths from all causes in all groups in the hospital.

Throughout the period there were approximately 50 per cent more postmortem examinations of males than of females. Nearly as many women as men were admitted to the hospital but fewer of the women died there, especially in the large number admitted for complications of pregnancy and for delivery.

One-half of the autopsies were done on subjects more than 50 years of age. A generation ago the median age was 40 years; now, half of the patients examined postmortem are over 55 years of age. In 1918 less than one-tenth of autopsies were done on patients more than 70 years of age; in 1948 more than 25 per cent were on subjects in that age bracket. This is owing to a change in the age distribution of the general population and to the lowered fatality rates in the younger patients.

Autopsies have been relatively more frequent among white than among non-white patients. Altogether, more than three-quarters of all the autopsies in this series were done on white subjects, about 15 per cent on Mexicans and about 7 per cent on Negroes. The proportion of Negroes nearly doubled during the period, while the proportion of Mexicans decreased. The exact percentage of autopsies in different age, race and sex groups is not now available. Apparently permission for autopsy is harder to get for females than for males, for old persons than for young, and for Negro than for white patients.

Since a complete cataloguing of all deviations from normal in a single autopsy might constitute a volume in itself, usually only the most obvious or important conditions are noted. The frequency with which certain diagnoses are recorded may vary with the clinical interest in them, pathological connotation and with passing medical fancy. The difference between the recorded frequency and the actual occurrence of different conditions should be borne in mind. Nevertheless, the incidence of each diagnosis in the multiplicity of diagnoses recorded in the autopsies at the Los Angeles County General Hospital and the frequency with which it was deemed to be the primary cause of death, generally reflects its real importance as a cause of disability and death.

Altogether 215,468 different diagnoses were recorded in the 40,130 autopsies. The average number of diagnoses per autopsy increased from less than four in the first half of this series to six during the last decade of the period reviewed. The more complete recording of the findings probably reflects the growing influence of the medical schools in Los Angeles as well as the higher incidence of older patients, with more pathologic conditions in each, in the later period.

The most frequent single diagnoses recorded were bronchopneumonia, hypertensive cardiac hypertrophy and atherosclerosis, but this may be misleading as to the actual frequency of the various conditions. Many common conditions, such as acute pharyngitis and acute rhinitis or the common cold, were rarely recorded, while there were nearly 500 cases of pancreatitis and 139 cases of polycystic kidney. The most frequent single causes of death listed were pulmonary tuberculosis (2,527 cases), hypertensive cardiac hypertrophy (1,411 cases), and bronchopneumonia (1,267 cases).

The frequency with which a particular condition is recorded as the primary cause of death in all autopsies in which that condition is observed, including cases in which it was a contributing factor or even an unrelated associated condition, indicates what may be referred to as the case fatality ratio —that is, the number of fatal cases in relation to the total number of cases. This approximates the true case fatality rate only with regard to those conditions that are readily recognized at autopsy when not in themselves the cause of death. Certain diseases such as severe pulmonary edema were rarely recorded as the primary cause of death although they frequently were the terminal event. Chronic pleuritis was recorded 1,500 times but in only five instances was it considered a primary cause of death. Diabetes was recorded in 912 autopsy reports, chiefly on the basis of clinical diagnosis, and in one-third of the cases in which it was noted it was given as the primary cause of death.

Using the ten broader groupings of the Lesion Index of the Los Angeles County General Hospital, the most common sites of pathologic changes noted in the 215,468 different diagnoses were the circulatory, the respiratory and the alimentary systems, while the most common etiologic classes were the degenerative conditions, acute infections and chronic infections, in that order. The most common sites of conditions listed as the primary cause of death were the respiratory, the circulatory and the alimentary systems, while the most common causes were the degenerative conditions, acute infections and chronic infections (see Table 1).

About one-tenth of all autopsy diagnoses including more than a quarter of the primary causes of death, had been cross-indexed into general categories, among which cardiorenal disease (8,847, of which 5,890 were fatal), malignant disease (6,233, with 5,730 fatal), and tuberculosis (6,085 with 3,635 fatal) were by far the most frequent.

The relative frequency of different diagnoses varies with the fineness of the classification used. Thus a disease which may occur in many sites, as cancer or tuberculosis, may be divided up into a large number of diagnoses if classified according to location, and its true incidence thus lost. The 3,208 cases of pulmonary tuberculosis, with 2,527 in which this was given as the primary cause of death, constitute only a part of the incidence of tuberculous disease. There were actually 15,378 different diagnoses of more than a hundred different kinds of tuberculous lesions found in 6,085 autopsies, in 3,635 of which tuberculosis was recorded as the primary cause of death. On the other hand, excessive grouping may obscure the importance of distinct entities. The Lesion Index in the pathological department of the Los Angeles County General Hospital or the Stan-

TABLE 1.—*Sites and causes of lesions diagnosed in 40,130 autopsies*

Anatomical Location	Total	Fatal
Skin and bones	5,730	1,250
Nervous system	12,481	4,380
Circulatory system	46,451	7,497
Respiratory system	45,729	8,920
Alimentary system	39,988	6,992
Hematopoietic system	11,012	906
Genito-urinary system	32,676	4,039
Endocrine system	3,462	791
General	17,939	5,355
Totals	215,468	40,130
Etiologic Factors	Total	Fatal
Congenital	4,269	875
Acute infection	50,566	8,934
Chronic infection	23,392	6,186
Degeneration	94,521	13,255
Neoplasms, benign	7,990	2,217
Neoplasms, primary	3,942	3,288
Neoplasms, metastatic	12,386	841
Trauma	5,662	2,660
Miscellaneous	12,740	1,874
Totals	215,468	40,130

TABLE 2.—*Autopsy diagnoses compiled according to the broad sections of the International Statistical Classification of Diseases, Injuries and Causes of Death*

	Section	Number of Classes of L.A.C.G.H. Lesion Code	Number of Diagnoses	Primary Causes of Death
I.	Infections	275	21,250	6,251
II.	Neoplasms	1,187	21,449	6,102
III.	Metabolic	119	5,003	997
IV.	Blood	101	6,314	324
V.	Mental	4	1,056	254
VI.	Nervous system	186	11,052	3,829
VII.	Circulation	258	45,545	5,644
VIII.	Respiration	208	27,782	3,718
IX.	Digestion	399	24,887	3,865
X.	Genito-urinary	314	17,136	1,756
XI.	Pregnancy	41	2,199	352
XII.	Skin	79	1,234	224
XIII.	Bones	103	943	155
XIV.	Congenital	232	9,216	1,986
XV.	Infancy	18	6,354	2,553
XVI.	Ill-defined	157	8,801	1,594
XVII.	Violence	262	5,247	526
	Total		215,468	40,130

dard Nomenclature of Diseases and Operations of the American Medical Association are excellent for locating specific individual conditions, but for comparing and analyzing the relative incidence of different types of diagnoses a classification such as that of the International List of Diseases and Deaths may prove advantageous.

In the 17 chief divisions of the International List of Causes of Diseases and Death, the most frequent diagnoses were of circulatory system diseases, followed by respiratory and digestive diseases, malignant disease and infections. By the same groupings, the most common causes of death were infections, neoplasms and circulatory disease (about 15 per cent each) and diseases of the digestive, nervous and respiratory systems (about 10 per cent each). (See Table 2.)

Using the more detailed classification of the International List, the most frequent diagnoses were arteriosclerotic heart disease, bronchopneumonia, general arteriosclerosis, and congenital malformations (Table 3). The more important causes of death were pulmonary tuberculosis, arteriosclerosis, congenital malformation, and bronchopneumonia (Table 4).

Changes in the incidence of different diseases during the period reviewed reflect differences in the demographic compositions of the population served as well as differences in pathologic agents and medical control measures. To the greater proportion of older persons in the population may be ascribed the decrease of those diseases common among persons in the younger ages and the increase in the incidence of conditions that beset older people. In addition, however, the data were affected by the decrease in deaths from certain conditions, notably typhoid fever, scarlet fever and appendicitis, which have diminished strikingly chiefly as a result of medical advances. Some of the increases in malignant disease, poliomyelitis, diabetes and arthritis may not be so readily explained.

The relative changes in the hospital fatality rates show effects of medical progress even better than do the changes in total incidence of the various diseases. The decrease in hospital fatalities from tuberculosis, syphilis, benign neoplasms, diabetes, gastric ulcer, appendicitis, intestinal obstruction, enteritis, nephritis, and pregnancy conditions may be ascribed in great measure to improvement in medical care.

Box 500, Olive View.

TABLE 3.—*The ten most frequent diagnoses in 40,130 autopsies*

International Code No.	Diagnoses	Number of Classes in Lesion Code	Total	Primary Cause of Death
420	Arteriosclerotic heart disease	25	12,712	2,273
491	Bronchopneumonia	2	12,096	1,269
450	General arteriosclerosis	3	7,105	645
754	Congenital malfunction (circulatory)	57	6,712	1,637
795	Ill-defined causes	94	5,030	311
519	Pleurisy	26	4,965	42
446	Hypertensive arterial nephrotic, non-heart	4	4,578	448
422	Other myocardial degeneration	14	4,173	194
002	Tuberculosis, pulmonary	3	3,924	2,678
298	Disease of spleen	31	3,763	18
	Subtotal		65,058	9,515

TABLE 4.—*The ten chief causes of death in 40,130 autopsies in relation to number of times each was diagnosed*

International Code No.	Diagnoses	Number of Classes in Lesion Code	Total	Primary Cause of Death
002	Tuberculosis, pulmonary	3	3,924	2,678
420	Arteriosclerotic heart disease	25	12,712	2,273
754	Congenital malfunction (circulatory)	57	6,712	1,637
491	Bronchopneumonia	2	12,096	1,269
331	Cerebral hemorrhage	24	2,666	1,216
332	Cerebral embolism and thrombosis	5	3,691	1,206
776	Immaturity	1	1,843	1,090
581	Cirrhosis of liver	6	2,707	778
151	Malignant neoplasm of stomach	16	910	746
761	Birth injury	2	1,133	712
	Subtotal		48,394	13,605
	Total		215,468	40,130

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Injuries of the Musculotendinous Cuff Of the Shoulder

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• *Injuries of the musculotendinous cuff are frequent and often cause long periods of disability.*

The cuff is subject to progressive degenerative changes which are visible microscopically in most persons past 30 years of age, and visible grossly in those past 40. The cuff ruptures through areas of degeneration.

A great majority of patients recover good shoulder function under conservative treatment.

Operation is not urgent. Accurate diagnosis of a complete tear of the cuff cannot be made until the acute phase of injury has passed, and delay in operating does not decrease chances of good results.

INJURY OF THE musculotendinous cuff of the shoulder is relatively common and although it may seem to be of minor order it may cause many months of disability in a person whose livelihood depends on active use of the shoulder.

ANATOMY

The shoulder joint, whose semispherical humeral head articulates with a small shallow glenoid cavity, has a wide range of motion for dextrous use of the upper extremity. In phylogenetic change from a weight-bearing to a prehensile limb, the shoulder joint has sacrificed stability and strength for mobility. The joint capsule is lax, to allow freedom of motion. The capsule is attached to the periphery of the glenoid cavity of the scapula and to the anatomical neck of the humerus. It is strengthened by ligamentous bands and by tendons of the four short rotator muscles. These muscles arise from the body of the scapula and terminate in flat tendons that blend indistinguishably with the capsule and with each other, forming a structure which has been aptly named *musculotendinous cuff*. The supraspinatus tendon reinforces the capsule superiorly, the subscapularis anteriorly, the infraspinatus and teres minor posteriorly. The acromion process of the scapula and the coraco-acromial ligament form a protective roof over the shoulder joint. Beneath the acromial arch and the upper portion of the deltoid muscle lies the subacromial (subdeltoid) bursa, which affords a gliding mechanism for the musculotendinous cuff as it slides up under the acromion on abduction of the arm. Thus, the floor of the bursa is the musculotendinous cuff and the roof is the undersurface of the deltoid muscle and acromion process. Reaction of the bursa, therefore, commonly accompanies trauma or disease of the adjacent capsule or tendons.

Function of the component parts of the shoulder has been clearly described by Inman, Saunders and Abbott.[5] Elevation of the arm results from the combined action of the deltoid and short rotator muscles throughout the entire range of motion which occurs partially at the glenohumeral joint and partially by rotation of the scapula. After an initial "setting-phase" the ratio of excursion of the glenohumeral to scapulothoracic motion is as two to one, thus producing what Codman[3] described as "scapulohumeral rhythm." All the rotator muscles acting together stabilize the humeral head against the glenoid cavity. Abducting force is exerted by the superior portion of the cuff. The degree of rotation of the arm at any given moment determines which of the rotator muscles is in the superior position and therefore exerting this force. The force is most frequently, but by no means exclusively, exerted by the supraspinatus muscle. Tearing of one tendon may readily be compensated for by rotating the arm so that an intact portion of the cuff is superior. Thus, a rather extensive rupture of the cuff may be present in a shoulder in which there seems to be no loss of abductor power.

PATHOLOGY

The musculotendinous cuff is subject to progressive degeneration, which is considered to be a physiological aging process accentuated by chronic strain, overuse or repeated minor trauma. In the supraspinatus and subscapularis tendons, which are subject to more strain, more pronounced changes occur. Microscopically visible fraying, hy-

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alinization and fibrosis are present in most persons after age 30, and are visible grossly in those past 40 years of age. These changes become more pronounced with increasing age and cause weakening of the tendinous cuff. A normal tendon will seldom, if ever, rupture and the fact that a tendon has ruptured is indicative of a degenerative process. Wilson and Duff[9] reported on the pathologic changes of short rotator tendons of the shoulders in a study of 125 cadavers. They noted complete rupture in 22 per cent of subjects over 30 years of age and an increasing incidence in older age groups.

A rupture of the musculotendinous cuff may be classified as "incomplete" when it does not extend through the thickness of the tendon. That occurring on the joint surface was termed by Codman "rim-rent." The tear may be on the bursal side or may occur within the substance of the tendon and not be visible from either surface. A "complete" tear extends through the entire thickness of the tendon, opening free communication from joint to bursa. Tears vary in size and site. The most common lesion is initially a transverse tear with subsequent longitudinal split. This enlarges with ensuing strain or reinjury and separates anteroposteriorly, due to divergent muscle pull. In all tears of the cuff, the essential feature is that tearing occurs through an area weakened by a degenerative process.

SYMPTOMS

Most patients with an acute injury of the shoulder cuff are past 40 years of age—that is, the injury usually occurs after degenerative changes that weaken the cuff and predispose to tearing have taken place. Injury is more common in laborers owing to their exposure to repeated strain which augments degenerative lesions and to acute trauma which precipitates the tear. Injury may be incurred as in a fall on the outstretched arm, or perhaps sudden abductor movement of the shoulder strains the cuff beyond its functional limit, rupture resulting. There is a feeling of something tearing or giving way, associated with acute pain which increases in severity for the first four to seven days, then decreases. The patient is unable to actively raise the arm or to maintain it in abduction. This limitation may be owing either to extensive rupture of the tendon or to protective muscle spasm and reflex muscle inhibition. There is ache in the shoulder, often referred to the point of deltoid insertion or down the arm, and localized tenderness over the site of the cuff lesion. In less severe cases, with preservation of abductor power, there may be a painful jog as the arm is abducted past the horizontal, owing to impingement of the cuff against the acromion.

CONSERVATIVE TREATMENT

During the acute phase, it is impossible to evaluate the degree of actual injury to the cuff, and definite diagnosis cannot be made for from two to four weeks. Conservative treatment is therefore indicated initially in all cases. Radiant heat and gentle massage are comforting and allay spasm. In some instances, local injection of procaine may be indicated to give temporary relief. The abduction or "airplane splint" is uncomfortable and ineffectual. Since the scapula rotates freely, especially when the shoulder muscles are in spasm, and the humerus remains in a position of adduction in relation to the scapula, even though the arm be elevated on a splint, splinting neither relieves strain on the cuff nor prevents contracture. The arm should be supported in a sling but complete immobilization is undesirable as it increases discomfort and causes stiffness. Every two or three hours the arm should be removed from the sling for gentle motion (Figure 1). In the initial exercise of "relaxed circumduction" the patient leans well forward and supports himself with the uninjured hand on a chair; then the injured extremity, hanging free, is swung slowly in circles for several minutes (Figure 1, A). As the acute phase begins to subside, more activity is indicated. In the wall climbing exercise (Figure 1, B) the patient stands with his side to the wall, places the tips of the fingers on the injured side against the wall and then moves the fingers in a "walking" motion up the wall to ever higher goals to stretch the shoulder into abduction. Exercises with the use of a staff (Figure 1, C) are valuable, particularly in restoring external rotation. The use of a rope through an overhead pulley (Figure 1, D) is another method of obtaining active exercise and passive stretching of the shoulder in abduction and external rotation with the good arm assisting the injured one.

Some forcing of motion is essential to prevent permanent stiffness of the shoulder, especially as most of the injuries occur in older persons with degenerative capsular lesions. Yet, if motion is forced too vigorously, it will cause increasing pain and muscle spasm, thereby defeating the purpose. The guiding rule is not to force activity beyond the point of mild discomfort. As improvement is made the sling may be left off for longer periods and more vigorous exercise permitted.

The shoulder stiffness that is present soon after injury is owing to muscle spasm, and motion increases as spasm subsides. However, after several weeks of inactivity, adhesions develop. In this stage, passive stretching is indicated. Here again, a nice balance must be reached between ineffectual motion and stretching so vigorous that pain and spasm are increased. Positive stretching should be done by a



Figure 1.—*Upper left:* "Relaxed circumduction." This is the initial exercise. The affected extremity hangs free, and is slowly swung in circles for several minutes. *Upper right:* "Wall-climbing exercise." The fingers of the affected extremity creep up the wall to an ever higher goal, stretching the shoulder into abduction. *Lower left:* Exercise with a staff, particularly valuable in restoring external rotation. *Lower right:* Exercise with rope through an overhead pulley affords active exercise and passive stretching. The good arm assists the affected one.

physical therapist under the direction of a physician, and the amount of force used should be dictated by the patient's response. Adequate stretching will cause the shoulder to hurt at the time, but not to ache afterward. Stretching under anesthesia is thoroughly condemned, for without the sensation of pain as a guide the shoulder is frequently harmed rather than helped by the procedure which may cause further tearing of the capsule, hemorrhage, edema, spasm and pain.

When the acute phase has subsided, it becomes possible to determine the condition of the cuff by the functional tests of active shoulder abduction and by the patient's ability to maintain abduction after the arm has been passively elevated by the examiner, the latter being the more informative test. Pain without demonstrable weakness when strain is thus imposed on the cuff suggests a small or an incomplete rupture. If the patient is unable to maintain the arm in abduction, extensive rupture is indicated. Complete

loss of function indicates that there has been massive avulsion of the entire cuff.

In a large majority of instances, there is a gradual return of active abductor power and decrease in pain. In that case, only conservative treatment is necessary. Operation should not be considered as long as satisfactory progress is being made under conservative treatment (as long as eight to ten weeks). Small tears heal without loss of function, and even larger ones may not cause so much restriction of motion that the patient is seriously handicapped. Age and station in life must also be considered: An elderly or retired man may accept considerable permanent loss of function, whereas a younger working man who has pronounced weakness of abduction and is not improving should have the benefit of surgical repair. An example of adaptation to partial disability is illustrated in Figure 2. A man, aged 70, fell while going upstairs, threw out his right arm to protect himself and felt sudden sharp pain in his shoulder, associated with loss of ability to elevate the arm. When the patient was reexamined six years later, it was noted that he had subconsciously learned to externally rotate the arm when elevating it and was not aware that he had lost much abductor power, although obviously there was extensive tear of the cuff.

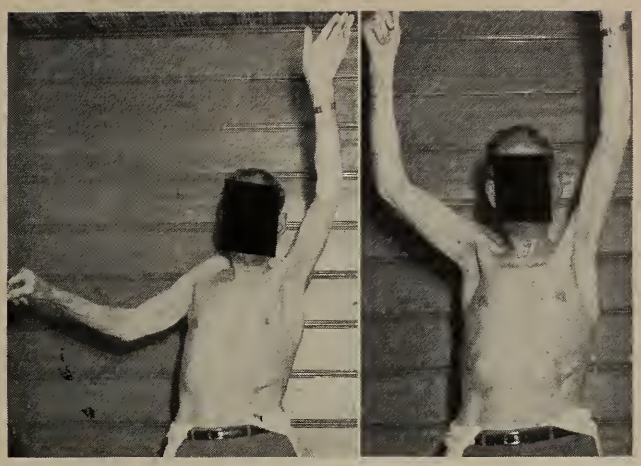


Figure 2.—*Left:* Typical appearance of a patient with a large complete tear of the superior (supraspinatus) portion of the cuff. This picture, taken six years after injury, shows maximum degree of active abduction as the arm is raised from the side in a position of neutral rotation. *Right:* This picture, taken on the same day, shows the greater range of active abduction the patient obtained by raising the arm in complete external rotation. In this position an intact (subscapularis) portion of the cuff was in the superior position. The patient had acquired this maneuver subconsciously and was not aware that he had lost much abductor power.

SURGICAL TREATMENT

McLaughlin[7] and DePalma[4] both observed that the results of operation done long after injury are as good as those obtained by operating early. They noted also that if repair is adequate the size of the tear does not materially affect the end result. Therefore, an adequate trial of conservative treatment should be given and operation decided upon only if the condition seems static and if there is so much persistent pain and disability that the patient desires operative exploration.

A simple deltoid splitting incision is inadequate for cuff repair and it endangers the circumflex nerve which runs forward transversely through the muscle. The anterior exposure through the deltoid-pectoral junction augmented by partial reflexion of the deltoid origin gives adequate visualization for most procedures in the shoulder, although the acromion process partially obscures the cuff. McLaughlin's modification of the saber-cut incision affords the best view of this region. In this procedure the skin incision crosses the shoulder in the suspender line, just lateral to the acromial clavicular joint and extends forward 3 to 5 centimeters. For preliminary exploration, the anterior end is developed first. The deltoid muscle is exposed and the fibers split not more than 4 centimeters. This is done in the anterior portion of the muscle so that if any nerve fibers are cut there will be minimal muscle atrophy. The cuff may then be inspected by rotating the arm, and minor procedures can be carried out without further exposure. More extensive exposure is necessary, however, for most cuff repairs; and it is accomplished by extending the skin incision backward to the posterior deltoid muscle. The acromion process is exposed and osteotomy between the acromial-clavicular joint and the tip of the acromion carried out. The amount of bone excised depends on the exposure needed. The excised portion of the acromion may be discarded and its removal obviates impingement of the repaired cuff against the acromion. If the interior of the joint is to be inspected, the capsule is split longitudinally, preferably in the interval between the supraspinatus and subscapularis tendons.

Ordinarily, surgical treatment is not necessary in cases of incomplete tearing. Sometimes, however, persistent pain caused by mechanical impingement of the lesion against the acromial arch may dictate operation. Alleviation can be accomplished by partial removal of the acromion process and repair of the capsular lesion. Usually the capsular lesion can be excised and the defect closed by direct suture.

Occasionally it is possible to carry out direct suture of a simple split in the cuff, but in most cases a plastic repair is necessary. A common error is to try to close an elliptical defect by abducting the arm and attempting a direct end-to-end suture. This is doomed because it violates surgical principles and ignores the basic pathologic factors of the lesion.

In planning surgical repair, three principles must be remembered. First, the tear is through an area of degeneration of the tendon which must be excised back to healthy tissue. Second, the lesion is a combination of transverse and longitudinal tear which spreads by muscle pull. Third, tissue must not be sutured under tension. In McLaughlin's method of repair, a continuous silk suture is used in a shoelace manner to close the defect from side to side as much as possible without tension. Then the distal end is reinserted into the humeral head only as far distally as it will reach without tension with the arm at the side. An area of exposed cartilage of the humeral head is removed and the edge of the cuff is attached to the bone by passing silk sutures through drill holes.

Postoperative care should be under the direct supervision of the operating surgeon, as only he knows the pathological condition of the torn cuff and the strength of the surgical repair. Until the wound is healed, balanced suspension traction affords adequate protection and permits gentle active exercise. Then all immobilization except a sling is discontinued and the patient put on a course of graduated exercises (beginning with relaxed circumduction, then "finger walking" up a wall and the like, as previously described) and is encouraged to use the arm for light activities. Active abduction against gravity is not permitted for about a month, or until the surgeon believes that the tendon has firmly reunited.

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Medical Textbooks for South Korea

PHYSICIANS ARE INVITED to send their surplus medical textbooks and medical journals to Korea for utilization of South Korean medical schools and hospitals. Mail shipments, express collect, to: Alameda Medical Depot, 2155 Webster Street, Alameda, Calif. Each shipment should be clearly marked "Kormeded."

—*A.M.A. Secretary's Letter*

Biological Warfare

JOHN BEESTON, M.B., D.P.H., *Los Angeles*

• *The use of biological agents as controlled weapons of war is practical although uncertain. Three types of agents are feasible, including pathogenic organisms and biological pests, toxins, and synthetic hormones regulating plant growth. These agents may be chosen for selective effects varying from prolonged incipient illness to death of plants, man and domestic animals.*

For specific preventive and control measures required to combat these situations, there must be careful and detailed planning. The nucleus of such a program is available within the existing framework of public health activities. Additional research and expansion of established activities in time of attack are necessary parts of biological warfare defense.

THE TERM "biological warfare" is a relatively new one in the vocabulary of the military sciences. The subject matter, however, is by no means new. The term "germ warfare" has been in use for several decades and is still used by some people in dealing with this subject. The more inclusive term "biological warfare" is desirable since it covers disease agents other than living forms. The earliest definitions included only living agents which, when disseminated among an enemy, would interfere with his capacity to resist. These agents might include several types of insects such as the Japanese beetle, the Mediterranean fruit fly, and the European corn borer, which might produce famine by the destruction of crops. The other method would be to introduce, directly, the specific etiological agents of diseases known to be pathogenic to man, the domestic animals, or edible plants. Recently the concept of biological warfare has been expanded to include, in addition, the toxins produced by certain pathogens. Still more recently, the effect of certain synthetic hormones that control the growth and fruit-bearing functions of most plants have been studied. As a result, certain hormones have been developed which can interfere with the production of normal crops and vegetables.

The current concept, therefore, of biological warfare includes three major groups. First, the living factors—either insect pests or pathogenic organisms; secondly, the toxins from certain specific pathogens; and thirdly, synthetic hormones. It will be seen that this latter category of synthetic hormones forms a bridge between biological warfare and chemical warfare, which is more usually concerned with poison gases and similar agents.

The role of biological warfare, as a controlled weapon of war, is still uncertain, since large-scale use of various agents has not been tried up to the present. Consequently in the minds of many people there is much misunderstanding of the possibilities and potentialities of this type of weapon. On the one hand, alarmist reports have appeared in some sections of the press exaggerating the magnitude of the situation. On the other hand, excessive complacency on the part of some professional personnel has suggested that this type of attack is either impossible or ineffectual. As usual, the truth lies somewhere between.

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HISTORICAL BACKGROUND

History contains many examples of the effectiveness of biological agents in defeating armies. On the plains of Thessaly, epidemics killed nearly two-fifths of Xerxes' 800,000 troops. Plague and typhus slaughtered the Crusaders at the gates of Antioch and Jerusalem. Typhus liberated Granada from the Moors. Typhus and dysentery decimated Napoleon's grand army in Russia.[6] These epidemics were natural in origin, and the populations at risk had little or no preventive measures. Even without the latter, a considerable time factor is involved in the spread of epidemic disease on this vast scale. Perhaps the earliest deliberate attempts to spread disease among the enemy was the practice sometimes used in the Middle Ages of dropping plague-ridden corpses into the village wells.

During World War I, German secret agents in the United States infected livestock about to be shipped to the Allied Nations of Europe with glanders.[7] Although these attacks were crude, they indicated the possibility of using this weapon in the form of sabotage. During World War II the possibility of widespread dissemination of disease organisms was recognized. In order to provide the proper

defense mechanisms against this form of attack, it was necessary to have some fundamental knowledge. This could only be obtained by an extensive research program. Accordingly in the summer of 1942, the War Research Service was organized as part of the Federal Security Agency.

The research program was concentrated under the command of the Army's Chemical War Service, now called the Chemical Corps, and established at Camp Detrick, near Frederick, Md. In addition, the U. S. Navy established a center of operations at the University of California in Berkeley. As a result of this concentrated research during the war years, much information was obtained on the most effective biological agents to be used and the methods to distribute them. At the same time, research was concentrated on providing satisfactory defense measures to be used against these same agents. Although much of this vital research remains top military secret, George W. Merck, the drug manufacturer who served as the War Department's consultant on biological warfare, was able to reveal that "only the rapid ending of the war prevented field trials, in an active theater, of synthetic agents which would, without injury to human or animal life, affect the growing crops and make them useless."[6] With this state of knowledge available at the end of World War II, it seems almost certain that if World War III should come, some form of biological warfare must be expected.

GENERAL PRINCIPLES OF BIOLOGICAL WARFARE

There are several tactical uses of biological agents. The underlying endeavor of an enemy would be to destroy the power of an attacked nation to resist. The biological attack might therefore be directly on the military personnel involved in offensive or defensive action or, by concentrating on the civilian population, it might defeat the chain of production of war supplies that maintains the armed forces. There are several methods and degrees by which these tactics might be carried out. Biological agents might be used to kill outright, or to cause death after lingering illness, or merely to make people sick and indisposed.

By using a non-epidemic disease, the impact of an attack might be localized, whereas by using a self-propagating epidemic disease, a widespread pandemic could be created. By using agents against plants and animals, the food supplies of the defenders could be seriously depleted.

Whatever method might be used, the gross overloading of medical personnel, facilities and supplies, to say nothing of lowering of national morale, could be a serious matter.

Certain biological agents, because of their historical significance in decimating populations, will readily suggest themselves as the most deadly for purposes of attack. It must be remembered that there are fundamental differences between the dissemination of certain diseases by natural methods and the artificial spread of these agents. Diseases that normally require a vector for their propagation may be spread in deadly form by artificial means. In these circumstances, the control of the infections by breaking the normal chain of spread, such as vector control, will be quite useless. Also, it must be remembered that other effective control measures that will normally eliminate a natural epidemic may not be adequate when it comes to dealing with an artificial attack.

Biological agents used for warfare purposes will be selected for the highest virulence, the most unlikely serological types, and from groups for which vaccines are unavailable or ineffectual. In addition, much higher concentrations of the infective agent can be created than ever occur in nature.

From the consideration of these properties alone, a ready selection of diseases comes to mind. The type of infectious agent to be used would depend on the aim to be achieved. If the aim was to kill large numbers of people, plague, typhus, cholera, smallpox, influenza, tularemia, melioidosis, and botulism toxin would be suitable agents. If prolonged sickness rather than death was the aim, then several diseases—among which perhaps undulant fever is the best—might be used. The attack against domestic animals would most likely include the viruses of rinderpest, hog cholera, fowl pest, and hoof and mouth disease. The attack against plants would include several fungi, among them wheat stem rust, corn smut, potato late blight and the bacteria of bean blight, as well as the synthetic plant hormones previously mentioned.[5]

In order to confuse diagnosis, it is not unlikely that more than one disease agent would be used at the same time so that several different epidemics might occur among man and the domestic animals and plants.

METHODS OF ATTACK

The methods of attack would depend upon the effect desired. All normal known methods of dissemination of disease agents might be used. If specific acts of sabotage were attempted, local contamination of food or water supplies to a critical group of the population such as people in the vicinity of a tool-making factory might be used. For widespread dissemination aerosol sprays would seem to be the most effective type of distribution, since the extremely small size of the droplets would permit them to enter the alveoli of the lung.[8] Respiratory diseases spread naturally by droplets, spread much more slowly since the droplets are larger in size

and are either filtered out by the upper respiratory tract or diverted to the stomach by the ciliary action of the bronchial tree. Much larger doses of pathogenic organisms are required to produce infection by way of the stomach than by way of the alveoli of the lungs.

The aerosol clouds could be produced by several types of military weapons. Sprays from low-flying hostile aircraft would provide widespread distribution of infective agents. Similarly ships or submarines might make use of prevailing winds to spread clouds of aerosols over coastal areas. Guided missiles, various type of artillery shells, large and small bombs comparable with incendiary bombs, are also possible means of spreading aerosols.

The success of the measures would, to some extent, depend upon climatic and meteorological factors which cannot always be accurately foreseen, still less controlled. In general, the same meteorological conditions that make smog a serious problem can likewise increase the dangers from a biological warfare airborne attack. The significance, therefore, of this problem in Southern California, is important.

Perhaps the biological agent most likely to be used by the aerosol method on a large scale would be the bacillus of plague. Spread in this way, pneumonic plague would be the result. This form of the disease is highly fatal and contagious, and therefore self-propagating. However, newer vaccines and some of the latest antibiotics have shown encouraging results in treatment, provided this can be applied quickly.

The public fear of botulism is well known, and this most poisonous of all toxins could be distributed in local water reservoirs by enemy planes, or in specified food supplies by saboteurs. The toxin has been isolated and crystallized in pure form in which it has a potency of 30,000,000 minimum lethal mouse-doses per milligram. A more dramatic way of stating this is to say that one ounce of crystalline botulinus toxin injected into the skin has a theoretical potency sufficient to kill 900 billion mice. It has been calculated that 900 billion mice are equivalent to 180 million human beings.[6] In terms of newspaper headlines this might suggest that one ounce of toxin would be more than enough to kill the whole population of the United States. Fortunately there is a wide gap between the theoretical concepts of the laboratory and the tactical application of such a devastating weapon.

DEFENSE MEASURES

From all that has been said, it would seem at first that the potential outlook is a gloomy one. As with all weapons, the effectiveness of biological warfare depends on the extent and degree of defensive preparations. The federal, state and local public health and related services are a permanent defense force waging war on the natural attackers of man. The effectiveness of attack would depend therefore on the effective organization and maintenance of this permanent defense force.[1, 2] During times of potential biological warfare threat, it would be necessary to increase the size and vigilance of these peace-time defenders.

It must be remembered that the normal public health machinery would be most effective in preventing secondary cases after the initial attack of the disease had been delivered, by the use of isolation quarantine, immunization and treatment. To make these measures most effective, special epidemiological teams would be needed to facilitate rapid diagnosis so that the appropriate measures could be speedily applied. Special teams of medical officers are being recruited and trained to act as epidemic intelligence officers for this purpose.[4]

Other preventive measures will include plans to prevent and intercept enemy attacks and sabotage. After the attack, the exposure to harmful aerosols may be minimized by the individuals remaining indoors with windows and doors closed.[3] Air-tight shelters would be the most effective group protection, but these would need specially-designed filters in the air vents to prevent the ingress of pathogenic agents.

Protective clothes and gas masks similar to those used for combating poison gases have been shown to be effective protection for those who have to be exposed immediately after the attack. This kind of clothing, however, is impracticable for anything but short periods of work.

The detection of the attack and the identification of the type of agent used is of fundamental importance so that effective control measures may be applied as soon as possible. This in itself may be a difficult task, depending on the method of attack and the type of biological agent used. Preparations must be made so that insidious outbreaks of disease can be rapidly investigated by teams of epidemiologists. To make this possible, newer methods of sampling air at regular intervals have been devised. Similar techniques have been developed for speeding up the bacteriological examination of water samples, by using special filter papers that can be incubated in the pocket at body temperature. In this way, crude examination of routine samples during periods of emergencies may be made.[5]

Whenever biological warfare is suspected to have been used, general instructions should be issued to the public regarding the precautions to be taken in connection with normal water and food supplies.

The fact that boiling water and foodstuffs is an effective method of destroying all known pathogens and most toxins gives us a very powerful defense weapon provided this procedure is carried out. Other specific defense measures designed to counteract various types of biological attack are still on the secret list and therefore cannot be discussed here.

For the most part, the rest of the defensive measures revolve around the usual procedures taken to combat and prevent the outbreaks of natural disease. Such measures as maintaining the individual health at the highest level to promote a good general resistance to all disease will be obvious. In addition, the use of specific and well-tried immunization techniques, where they are available, will also be of value. Routine vector control will limit the possibility of the spread of the vector diseases by their usual channels. However, it must be remembered that many of these diseases can be spread by aerosols, in which circumstances the vector is not involved in the primary spread of infection. Similarly, specific measures designed to protect food and water from contamination can be expanded according to the local circumstances to provide emergency protection from enemy attack.

None of these objectives, however, can be attained without careful and detailed planning well in advance. Such planning must be made in the light of experience received from careful research into the methods of attack and defense. To make these plans effective requires the use of increased numbers of personnel who must be trained and equipped to do the jobs that are required. In the long run, none of this can be attained unless adequate funds are available to finance each of these stages.

In conclusion, it may be stated that whereas the initial impression of biological warfare creates a picture in the mind of horror and desolation, there is much comfort to be gained from the review of the normal and emergency protective and defensive services that may be brought into play. However, it must be remembered that to make these forces effective, money must be appropriated so that research can be conducted to find the best defensive measures. It should also be remembered that this research is not limited to purposes of war. Much of it is related to the fundamental problems of health and disease.

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Attitudes Toward Specific Therapies

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• *Attitudes of the physician and attitudes of the patient may affect the rational use of specific therapies. An example is the use of penicillin for the common cold. A survey showed that 25 per cent of physicians and 16 per cent to 22 per cent of three other groups polled had received penicillin for a cold, although there is no rational basis for such therapy.*

Evaluation of both the physicians' and patients' attitudes toward specific therapies might lead to a more rational treatment of the patient as a total personality.

WITH SO MANY NEW DRUGS on the market and so much advertisement of them, some patients and some physicians seem to have developed false expectations as to what these drugs can do. It is probable that such drugs as the antibiotics are often given in the absence of valid indications. The possible harm that may result from such a procedure is occasionally disregarded.

A review of both the physician's and the patient's attitude toward some of these drugs should help toward better evaluation of specific therapy for the patient as a total personality.

The question of whether it may be unwise to give penicillin to patients with a common cold was raised by Smith and Bloomfield[3] in 1948. Relevant to the question are the observations that:

1. There is no rationale for treating the common cold with antibiotics. The treatment remains symptomatic.[2]

2. There may be spontaneous occurrence of new bacterial infections during the course of treatment with penicillin.[4]

3. The needless administration of penicillin for the common cold promotes the emergence of strains of bacteria intensely resistant to its action among the organisms present in the body cavities. These organisms may then or later be the cause of a serious disease.[1, 3, 5]

4. Allergic sensitization to penicillin may occur after useless therapy which will prevent its employment at a later and more significant occasion.

Thus it would seem only logical not to use penicillin for the treatment of the common cold. But what are the facts regarding the use of penicillin for that purpose?

Three questions were put to persons of four groups, each group including 100 persons. The three questions were: (1) Have you ever taken penicillin? (2) Have you ever taken penicillin for a common cold? (3) Have you ever had a rash following penicillin therapy?

Group 1, the control group, consisted of 100 persons whose names were obtained at random from the telephone directory. Group 2 consisted of 100 physicians whose names were obtained at random from the telephone directory. Group 3 was made up of 100 consecutive new outpatients admitted to Stanford University Hospital, and Group 4 of 100 patients in the Stanford University Hospital Pediatric Outpatient Clinic. The answers are given in Table 1.

It would appear, then, that a very large proportion of the population has had penicillin therapy and that a considerable number of persons have been given the antibiotic for treatment of a cold. The question of whether penicillin is being used indiscriminately thus arises. The fact that many physicians took penicillin themselves for a cold may be considered a factor in the prescriptions for patients.

There are many pros and cons regarding the advisability of withholding penicillin for various infections until cultures and bacteriological studies have been made. There seems to be little warranty, however, for giving penicillin for the common cold. What, then, are some of the motivations for this practice?

Certainly false expectations on both the part of the physician and patient as to what penicillin can do for the common cold is a paramount factor. If a physician does not give penicillin to a patient who expects it, the patient may go to another physician. Therefore a physician should be alert for such false expectations and be able to deal with them logically. The feeling of urgency on the part of the patient to have something specific done is as important as the

From the Department of Medicine, Stanford University School of Medicine.

TABLE 1.—*Incidence of use of penicillin in persons of various groups*

Group (100 persons in each group).	Received Penicillin			Penicillin for Cold			Rash Following Penicillin		
	Yes	No	?	Yes	No	?	Yes	No	?
1. (Control. Names taken at random from telephone directory)	49	45	6	22	78	0	12	88	0
2. (Physicians. Names taken at random from telephone directory)	62	38	0	25	75	0	7	93	0
3. (General outpatient department patients)	43	51	6	16	84	0	16	84	0
4. (Pediatric outpatient department patients)	65	35	0	16	84	0	4	96	0

feeling of urgency on the part of the physician to do something specific. Pecuniary aspects should also be considered as a factor in the compulsion to supply specific therapy.

None of those factors nor all of them are cogent enough to stand in the way of rational treatment of the disease and of the patient as a person. Perhaps some of the same factors operate in consideration of other forms of specific therapy such as administration of hormones or of other antibiotics, certain surgical procedures, electric shock therapy and others.

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Psychiatric Contraindications to Pregnancy

With Reference to Therapeutic Abortion and Sterilization

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• *Pregnancy and parturition are not considered the basic causes of associated mental disorders, but as precipitating stresses.*

Pregnancy and parturition are thought to involve conflicts relating to dependency needs, homosexuality and hostility toward the child and husband.

The incidence of psychoses related to pregnancy and childbirth appears to be declining.

Therapeutic abortion and/or sterilization are indicated when continuance of pregnancy or future pregnancies would be likely to precipitate severe mental disease. Among the important factors to be weighed in considering a recommendation for abortion or sterilization are: the pattern of previous psychotic reactions (severity, duration, reversibility, relation to pregnancy), the physical constitution of the patient, the religious and other personal beliefs of the patient and her family, the desire for parenthood, and the number of living children.

A physician would do well to consult the laws of his state with regard to abortion and to call upon suitable consultation in approved hospitals as safeguards against subsequent legal complications. The legal situation regarding sterilization appears to be less complex.

IT IS WELL KNOWN and accepted that pregnancy and the puerperium impose a physical and physiological strain upon the mother. In addition there is an emotional stress, in part caused by the physical and physiological changes in pregnancy, but to a much larger extent quite distinct and unrelated to that condition. This emotional stress, which occurs in varying degrees in all women during pregnancy, is much more prominent and considerably more disabling in persons with preexisting emotional and personality disorders, particularly those with a history of previous overt mental illness.

Owing to the severity of the stress and the comparative inability of women with emotional disorders to cope with it, pregnancy and the puerperal state are often the precipitating factors of severe and frequently long-lasting mental illness that has profound effect upon the health and life of the woman and upon the immediate family, deprived of both mother and wife. The cost to the family and community, however secondary in consideration, is nevertheless of tremendous importance and further reason for physicians to be concerned with prevention.

ETIOLOGY

From Zilboorg's[20, 21, 22] considerable contributions to the theoretical understanding of mental illnesses related to pregnancy and childbirth have come useful developments in the psychotherapeutic management and prevention of these and related disorders. He postulated that pregnancy and parturition, owing to the significant sexual implications and to the associations with earlier family relationships, accentuate and bring to the surface old and forgotten feelings and attitudes that are difficult for the woman to cope with. The intensity of these buried feelings and the strength of the personality to meet the onslaught determine the severity of the reaction.

Zilboorg noted that in women with schizophrenic reactions the premorbid personality was characterized by shyness, withdrawal, rigidity, sexual frigidity and much evidence of latent homosexuality. These observations have, for the most part, been corroborated by others.[1, 6, 16]

The depressive reactions, on the other hand, stem from the patient's needs to be dependent upon her mother, together with an inability to accept the new role of mother to a small child "with all the love going out and none coming in," as one patient put it. Universally observed in all different forms of reaction is unconscious hostility toward both the child and the husband. The child becomes the personification of the patient's frustrated need to be dependent, whereas the husband becomes the culprit "who did this to me."

Toxic-exhaustive factors do not play the important role formerly assigned to them. Two reasons are considered responsible for this diminution: (1) The previously widespread orientation of physicians to concepts of disease as wholly organic led quite naturally to more diagnoses in this category than the currently prevalent dynamic orientation would

permit; and (2) advances in understanding pregnancy and the puerperium together with newer therapeutic techniques have made it possible to prevent or arrest toxic-exhaustive factors in cases where they might otherwise play a part in mental illness. This is illustrated in Table 1.

Linn and Polatin,[6] in summarizing a report they made on the subject, wrote: "While toxic factors figured significantly in the onset of their illnesses, a detailed study of one of these two cases made it clear that the toxic factor was in the nature of a last straw and that other factors were much more important." Similar observations have been reported by other investigators.

INCIDENCE

Statistics on mental illness associated with pregnancy and parturition indicate a gradual diminution in incidence (Tables 2 and 3).

The dimunition related to the number of births is probably owing for the most part to the previously mentioned better control of toxic-exhaustive factors. The decrease noted in relation to the number of women admitted to hospital is believed to be attributable to other factors in addition to the foregoing: (1) The increased tendency to hospitalize patients for mild conditions, for which previously hospitalization would not have been considered; and (2) the relative amenability of illnesses associated with pregnancy and childbirth to the newer forms of psychiatric treatment.

TABLE 1.—*Diminishing incidence of toxic-exhaustive reactions in pregnancy and puerperium.*

Authors and Year of Publication	Total in series	Toxic-exhaustive Cases	
		Number	Percent
Gregory,[5] 1924	114	31	27
Smalldon,[16] 1940	220	8	4
Brew and Seidenberg,[1] 1950	83	4	5
Linn and Polatin,[6] 1950	22	2	9

DIAGNOSIS AND PREVENTIVE TREATMENT

Early diagnosis is desirable, for it increases the possibility of preventing progression to a more disabling illness. This is important from an obstetrical standpoint, if the treatment indicated happens to be therapeutic abortion. It is likewise important if the pregnancy is to continue and shock therapy and/or psychotherapy are recommended; it gives the psychiatrist a longer time to work with the patient. This is particularly significant with regard to psychotherapy, not only because this form of therapy takes considerable time but also because the delivery date looms as a deadline, for which the psychiatrist must prepare the patient.

The diagnosis of overt mental illness presents little, if any, problem to the attending physician. The family or the patient herself will frequently recognize the more florid symptoms such as severe depression or agitation, hallucinations, delusions, and fears that the baby is abnormal or that harm will befall the child. Frequently the patient expresses dread that she might inflict severe harm on the baby. It takes an astute physician, however, to recognize the earlier, warning signals of oncoming illness. Titus[19] observed persistent insomnia as the most important early symptom of impending psychosis. He also relied heavily on a careful history. "A history of previous attack [psychosis], whether associated with an earlier pregnancy or not," he said, "warrants early consultation and reference of the patient to a psychiatrist."

Fishback,[4] in addition to insomnia, listed these danger signs: Pronounced restlessness, undue fears or worries, and notable changes in character. Several other early symptoms that should place the attending physician on guard are: Pronounced alterations in appetite, particularly anorexia, unusual changes in libido, hypochondriasis, and severe, prolonged hyperemesis.

TABLE 2.—*Incidence of psychoses associated with pregnancy and parturition correlated with the number of births*

Authors	Region	Time	Number of Births	Psychoses in Mothers	
				Number	Percent
Lloyd[7]	England and Wales	1878-1882	3,500,000	1,794	0.5
Noyes[10]	Dublin	?	54,000	81	0.15
Brew and Seidenberg[1, 8]	Syracuse	1933-1946	65,585	103	0.13

TABLE 3.—*Incidence of psychoses associated with pregnancy and parturition correlated with the number of women admitted to various mental hospitals.*

Authors	Region	Time	Number of Admittances of Women	Psychoses	
				Number	Percent
Lloyd[7]	Europe	1889	8,843	781	8.8
Zilboorg[20]	Europe	Late 19th century	10,394	904	8.7
Zilboorg[20]	New York State	1916-1921	16,286	560	3.4
Fishback[4]	Illinois	1930-1932	1,955	88	4.5
Brew and Seidenberg[1]	Syracuse	1933-1946	3,456	103	3.0
Brew and Seidenberg[1, 9]	New York State	1933-1946	83,182	1,063	1.3

Owing to the lack of suitable statistics and to the many variables involved, it is not possible at this time to state, even roughly, how many serious mental illnesses associated with pregnancy and parturition could be prevented with the appropriate procedures. It can be said, however, that a significant reduction is being effected today through early institution of the proper treatment. This is owing in no small part to the increased alertness of obstetricians, who detect questionable cases and seek early consultation. With an extension of the indicated measures, a much greater reduction could reasonably be expected. There is great need for factual studies in this area.

Psychotherapy

A psychiatrist examining patients referred because of suspicion of mental illness will (if the diagnosis is confirmed) classify them in one of three broad categories: (1) Those suitable for psychotherapy—capable of acquiring and integrating insight; (2) those suitable for only a limited amount of insight therapy and in need of psychotherapy of a supportive type which makes use of such techniques as ventilation, reassurance, suggestion and persuasion; and (3) those who are entirely unsuited for insight psychotherapy. Not only are patients in this group unable to achieve insight, but attempts in that direction might prove harmful, in that psychosis may be precipitated. Patients of this order should receive only supportive psychotherapy (if any at all), as outlined by the psychiatric consultant.

Shock Therapy

Convulsive therapy, most often electroshock but sometimes insulin shock, is used extensively in the treatment of mental illnesses associated with pregnancy and childbirth. In general, treatment of this kind is not considered prophylactic, although Stevenson and Geoghegan[17, 18] reported upon the use of electroshock in the prevention of recurring manic-depressive illness. More investigation, however, is required to further evaluate this preliminary study.

Inasmuch as electroshock is considered symptomatic treatment, psychotherapy should be used in conjunction with it wherever possible in suitable cases to attempt to work out the basic causative factors.

THERAPEUTIC ABORTION

No hard and fast criteria have been established for the indication of therapeutic abortion in connection with mental illness, and considerable diversity of opinion exists among psychiatrists and others in the medical profession. Any one or more of the following minimal indications should cause the attending physician to consider the patient as a possible candidate for therapeutic intervention and/or sterilization: A history of mental illness (1) related to pregnancy or parturition, (2) which required hospitalization, (3) associated with hallucinations, delusions or ideas of reference, (4) requiring shock therapy, (5) lasting one month or longer, (6) associated with suicidal trends or attempts, (7) associated with assaultiveness or homicidal trends, and (8) in others in the family.

Factors which merit consideration by psychiatrists include the severity, duration, reversibility, relation to pregnancy and the hereditary aspects of previous reactions. Where there has been no previous reaction, a psychiatrist, through his examination and with his understanding of the psychodynamic factors involved, should be able to render an opinion as to the susceptibility of individual persons. Other important factors requiring appropriate consideration are the general health of the mother, religious and other personal beliefs of the patient and her family, the desire for parenthood and the number of living children.

If the patient and her family are unable to follow a recommendation of therapeutic intervention, assurance should be given that alternate procedures will be utilized to avoid a serious illness, and that if such a reaction does occur, prompt treatment will be instituted toward effecting a remission.

The author feels that much of the literature on the subject tends to deal with mental illness too lightly and fails to fully grasp the seriousness that should correctly be associated with schizophrenic reaction, manic-depressive psychosis, severe reactive depression or obsessive-compulsive neuroses of the more disabling types. Also, insufficient emphasis is placed on the poor environmental influences exerted on a child by a mother having a history of schizophrenic or manic-depressive illness.

The literature on the subject is discordant. Reis[14] noted that dementia praecox (schizophrenic reaction) is definitely aggravated by pregnancy and that most authorities recommend the interruption of pregnancy, usually with sterilization, for this condition. He also stated that the course of manic-depressive illness is not influenced by pregnancy and therefore such illness does not constitute an indication for therapeutic abortion.

Singer[15] stated that in dementia praecox and paranoid conditions, abortion is of no help and that a mental state is seldom, if ever, justification for abortion.

The author takes issue with Singer's views and also with the idea expressed by Reis that manic-depressive psychosis is not influenced by pregnancy and is not an indication for abortion. The literature contains ample references to support belief that pregnancy does influence manic-depressive psy-

chosis.[1, 4, 5, 7, 16, 20, 22] Ebaugh and Heuser[2] said that "in selected cases of manic-depressive psychosis, the interruption of pregnancy may be advisable owing to the inability of the patient to care for the child and the problem inherent in management, confinement and labor." They further stated, "In pregnancy occurring in the single, young woman with resultant self-guilt and depreciation, coupled with strong, energetic suicidal drives, the interruption of pregnancy should be carefully considered."

In general, therapeutic intervention should be considered when the history and psychiatric examination give strong reasons to believe that the pregnancy, if permitted to continue, or the delivery, would result in a mental illness of a serious nature. As to what constitutes a *serious* illness, some of the criteria are: (1) the possibility of the patient's injuring or killing herself; (2) the possibility of the patient's injuring or killing others, particularly the newborn; (3) the problems related to management (hospitalization, restraint, care of the newborn, etc.); (4) extremes in anguish as seen in some obsessive-compulsive neuroses; (5) the length of the illness; the reversibility of the illness, either spontaneously or with treatment; (6) the effect upon the child through heredity and environment.

Appropriate emphasis, as mentioned previously, must be placed on a history of previous psychotic or depressive episodes and particularly those related to pregnancy. Fishback[4] concluded that "it is evidently possible for a woman, who became mentally ill during or following a pregnancy, to pass safely through one or more later pregnancies, but the danger of recurrence is too great to warrant the risk."

STERILIZATION

Singer[15] and Eden[3] advocated sterilization rather than merely advising against conception; in cases in which both the attending physician and the consultant believe that future pregnancy should be avoided. Before advising sterilization, however, a physician must be quite certain that the basic pathological process is one that could not be reasonably expected to be reversed either spontaneously or with treatment. Here too, as with therapeutic abortion, due consideration must be given to the other factors mentioned.

There are variations in which the sterilization recommendation may be carried out. Some physicians prefer to advise careful contraceptive technique; then, if conception should accidentally occur, therapeutic interruption would be done together with tubal ligation. There are several drawbacks to this method. One is the emotional implications of abortion in our society (taking a life), which would make it desirable to avert the pregnancy in the first place, obviating the subsequent necessity of therapeutic abortion. A second possible drawback is that pregnancy itself, aside from childbirth, precipitates mental illness in a substantial percentage of cases. Of 2,727 cases (the total of several series[1, 4, 20]) of mental illness associated with pregnancy and parturition 15 per cent began before delivery. Another obvious drawback to having patients rely exclusively on contraception is that a severe emotional strain is put upon them and their husbands if they know that a double surgical procedure awaits any slip in contraceptive technique. It should be apparent that keeping patients free from anxiety and tension-producing situations is basic in the management of such cases.

It is occasionally pointed out that a severe reaction, equal to that possible from pregnancy and childbirth, might be precipitated by the operative procedure of abortion and sterilization. While that may be true, it is important to note that the incidence of postoperative reactions is quite low. As a possible means of preventing such a reaction, it might be more desirable to utilize a vaginal rather than an abdominal approach for tubal ligation. A gynecologist should be consulted regarding the feasibility of such an approach. In a small percentage of cases it might be deemed preferable for the husband to have vasectomy than for the wife to be subjected to operation. In this connection, however, one must be aware of the possible psychological trauma to the man; only too often vasectomy is unconsciously regarded as castration and punishment.

Perlmutter[11] reported from 6 per cent to 17 per cent of therapeutic abortions done in various institutions were for neurological and psychiatric reasons. At Bellevue Hospital in New York 50 per cent of patients in whom pregnancy was interrupted for those reasons were also sterilized.

LEGAL ASPECTS

In this country only three states (Colorado, Maryland and New Mexico) and the District of Columbia make specific provisions for legal abortion if the future health of the mother is endangered. Elsewhere only threat to the life of the mother is considered as justification. (Physicians are advised to consult local statutes. Laws have lagged considerably behind medical progress and much diversity exists.[2])

Ethical physicians are protected by a more liberal interpretation of the word *life* in such statutory phrases as *necessary to preserve the life* or *to save the life*. Regan[12] observed that "judicial interpretation, meager as it is, is in accord with the generally held medical opinion that a therapeutic abortion is permissible to preserve the life or health of the

woman — though the indication be substantially short of an actual necessity to prevent imminent danger to her life."

Regan urged that physicians be cautious and advised that they not carry out abortion without first calling in reputable consultation and obtaining a concurrence of medical opinion on the necessity. He noted that so far as could be determined not a single prosecution has taken place where this procedure has been followed. Attention should be directed to the practice, now common in major hospitals, of requiring the approval of a special committee of the staff before therapeutic abortion may be carried out. Regan recommended that the laws be changed to limit the performance of lawful abortion to a licensed physician and surgeon, in a hospital, and that a broadening of the *exceptions* should be provided to include preservation of the health of the woman. "In this connection," he said, "it should be realized that the probability of the delivery of a grossly defective child poses a serious threat to the physical and mental health of the pregnant woman."

Concerning sterilization, Regan[13] said: "Sterilization in California and in other states constitutes the crime of mayhem, except when done upon a positive medical indication, namely in order to safeguard the patient's health or to preserve her life. Where for the reasons just mentioned, it is necessary to avoid pregnancy, it may be legally proper to perform a vasectomy on the husband." Where any doubt exists, consultation is recommended as a further safeguard.

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The Exercise Test in Electrocardiography

Detection of Coronary Artery Disease

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• Master has proposed a test for detection of latent coronary artery disease by means of electrocardiograms made after standard exercises consisting of walking back and forth over two steps. This test was used in routine examinations of airline employees, with the special purpose of evaluating the test for use on apparently normal persons.

Of 526 males tested, 283 were under 40 years of age and 243 were aged 40 years or more. Coronary artery disease was indicated in 16 males in whom there was no other evidence of the disease, five of whom had hypertension. No electrocardiographic evidence of coronary artery disease was obtained for three males in whom the disease was diagnosed or was strongly suspected. The test gave negative results for 16 males whose electrocardiograms made at rest were compatible with coronary artery disease. The percentage of positive results in men under 40 years of age was 4.3; in men over 40, 0.6.

Of a control group of 69 women under the age of 35 years, in none of whom coronary artery disease was detected by other means, six had positive response to the test.

It is concluded that Master's criterion for the most common positive finding, a depression in the ST segment of over 0.5 mm., allows too many false positive findings and that a figure of 1.0 mm. to 1.5 mm. would be a better index. A negative finding apparently does not exclude the possibility of coronary artery disease or of coronary occlusion. The usual 12-lead electrocardiogram made at rest appeared to be of greater value in detection of latent coronary artery disease in apparently normal persons.

CORONARY ATHEROSCLEROSIS may be present to a significant degree in a person who has no history suggestive of the condition and in whom it is not disclosed by physical examination or by electrocardiograms made at rest. A simple and reliable test for detecting latent coronary artery disease in such a person would be of great value. Several reports in recent years have described the use for this purpose of the electrocardiogram made after exercise.[4] The two-step exercise test developed by Master[2] seemed to the authors the most logical test because it is well standardized for age, weight and sex, is simple for the subject to carry out, and does not involve unusual activity or occasion anxiety. Master has recommended that the test be used in the routine examination of persons over the age of 35 years, those undergoing excessive stress, athletes, military recruits, pilots and industrial employees.[5, 6]

This presentation describes the authors' experience with Master's test in the examination of 595 employees of a large airline, of whom 283 were males over 40 years old and 243 were younger males. Whereas most published reports of exercise tests[1, 3, 7, 8] are concerned with patients in whom the diagnosis of heart disease had been made or was being considered, the study here reported was made in connection with routine physical examinations of persons who were considered healthy. The authors were particularly interested in evaluating the test as a means of detecting latent coronary artery disease in such persons.

METHOD

A twelve-lead electrocardiogram was made on each subject at rest. Three electrocardiograms were made with the three standard leads and the fourth unipolar chest lead, one of them immediately after exercise, another at two minutes, and the third at six minutes. All electrocardiograms were made with the subject recumbent, in a quiet, relaxed atmosphere and at least an hour after eating.

The exercise in the standard two-step test consists in walking back and forth over two steps nine inches high for a specified number of trips in one and one-half minutes, the number of trips depending on age, weight and sex. It has been reported that in cases in which positive findings are not obtained with this test they may be obtained with the double test, in which twice the number of trips are made in three minutes. To minimize the possibility of false negative results, the double test was used exclusively in the study here reported. A Sanborn Viso-Cardiette was used throughout the entire study.

Master's criteria[4] were used in interpreting the electrocardiograms:

1. A depression of the ST segment in any lead of over 0.5 mm. as compared with the PR interval of the same cycle, the level of the string just following the QRS complex being compared with that immediately preceding the complex. (To avoid erroneous interpretation of ST segment levels, only those series of beats having an essentially horizontal base line were considered.)

2. Changes in T wave direction in any lead, except the third standard lead.

3. Development of arrhythmias or large abnormal Q waves.

4. Changes from normal to abnormal conduction.

Five hundred and twenty-six males were studied, 283 under 40 years of age and 243 aged 40 years or more. Of the males, 157 were flight employees and 369 were not. Because of the rarity of coronary atherosclerosis in healthy young females, 69 females under the age of 35 years were tested as a control series.

RESULTS AND REPORTS OF CASES

Electrocardiograms made after the exercise test gave positive results in 11 males for whom there was no evidence of coronary artery disease on clinical examination or in electrocardiograms made at rest:

Age	Occupation	Electrocardiogram Following Exercise*
32	Flight Engineer	ST depression 1.0 mm. in V4, rate 85.
34	Pilot	ST depression 0.75 to 1.0 mm. in standard leads II and III, rate 110.
32	Pilot	ST depression 1.5 mm. in V4, rate 78.
30	Pilot	ST depression 0.75 to 1.0 mm. in standard leads II and III, rate 90 (Figure 1).
30	Pilot	ST depression 0.75 to 1.0 mm. in V4, rate 90.
35	Stockroom clerk	ST depression 0.75 in standard lead II, rate 85.
35	Laborer	ST depression 0.75 to 1.0 mm. in standard lead III, rate 62.
36	Laborer	ST depression 1.5 mm. in V4, rate 80.
35	Junior executive	ST depression 0.75 mm. in V4, rate 92.
37	Office Employee	ST depression 1.0 mm. in standard lead II, 0.75 mm. in V4, rate 90.
42	Mechanic	ST depression 1.0 mm. in V4, rate 114.

Positive results were noted in electrocardiograms made immediately after exercise in five males in whom no abnormality was evidenced by electrocardiograms made at rest but who had hypertension:

1. A 34-year-old flight engineer had no history of cardiovascular disease. Blood pressure was 150 to 160 mm. of mercury on systole, 90 to 96 mm. on diastole. He was moderately obese and had prematurely gray hair. No abnormality was noted on examination of the heart and the heart appeared of normal size in an x-ray of the chest. In the electrocardiogram taken after the exercise test there was an ST depression in V4 of 0.75 to 1.0 mm. at a rate of 124.

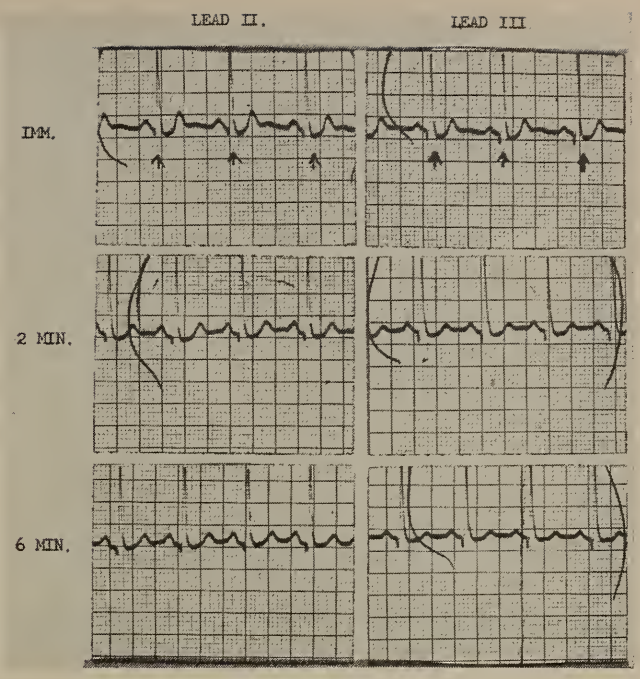


Figure 1

2. A 61-year-old mechanic had hypertension without symptoms. Blood pressure was 170 mm. of mercury on systole, 100 mm. on diastole. No abnormality was noted on examination of the heart and the heart appeared of normal size in an x-ray film. In the electrocardiogram taken after the exercise test there was an ST depression of 1.0 mm. in V4 immediately after exercise at a rate of 100.

3. A 41-year old ground employee had no history of cardiovascular disease and no evidence of such disease on physical examination, except for blood pressure of 160 mm. of mercury on systole and 100 mm. on diastole. In the electrocardiogram taken after the exercise test there was an ST depression in V4 of 1.0 mm. at a rate of 60.

4. A 54-year-old ground employee had no history of cardiovascular disease and no evidence of it in examination of the heart except for blood pressure of 180 mm. of mercury on systole and 100 mm. on diastole. The heart appeared of normal size in an x-ray film. In the electrocardiogram taken after the exercise test there was a depression of ST of 1.0 mm. in lead II and of 0.5 to 0.75 mm. in lead III and V4, at a rate of 86.

5. A 40-year-old office employee, prematurely aged in appearance, had had hypertension for about seven years (blood pressure 180 mm. of mercury on systole, 100 mm. on diastole). The arterioles in the ocular fundi showed Group II changes (Keith-Wagener-Barker). There was a blowing murmur of grade 2 to 3 on systole, in the fourth interspace near the left sternal border, which had not been observed in previous examinations. The heart appeared of normal size in an x-ray film. In the electrocardiogram after the exercise test there was depression of ST in lead II of 0.75 mm. at a rate of 90.

Electrocardiograms made at rest and after exercise gave no evidence of abnormality in three males in whom coronary artery disease was diagnosed or was suspected on clinical evidence:

*All abnormalities described occurred in tracing taken immediately after exercise with return to normal limits within six minutes.

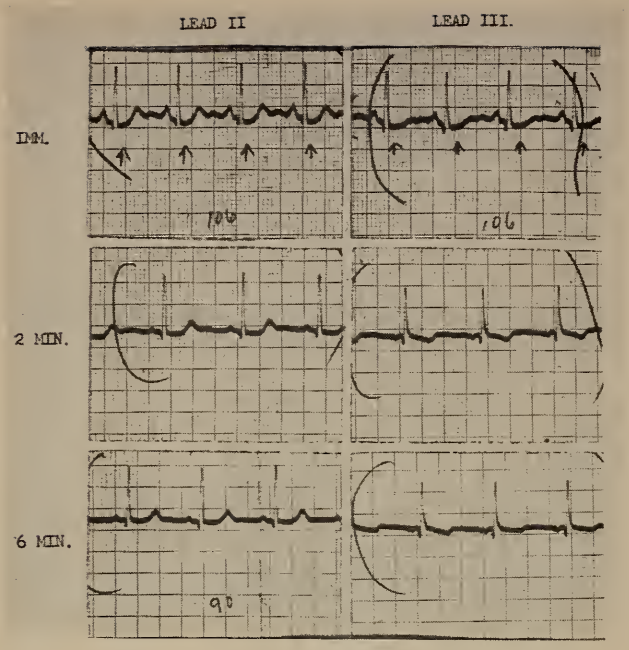


Figure 2

1. A 53-year-old ground worker had no history of heart disease, and physical examination and electrocardiograms disclosed no abnormality. Six months later he was suddenly seized with severe substernal pain which radiated to the left arm, the jaw and the upper back. He was immediately hospitalized but died four hours after the onset of pain. At autopsy advanced coronary atherosclerosis was found, and also a recent coronary occlusion which was considered to be the cause of death.

2. A 55-year-old male who was examined for employment was 66 inches tall and weighed 270 pounds. Blood pressure was 180 mm. of mercury on systole and 90 mm. on diastole. Glycosuria (3 plus) was noted. Electrocardiographic findings were within normal limits and no other abnormalities were observed. The subject refused further studies to determine the significance of the glycosuria; it can only be suspected that he had diabetes mellitus. (Strong suspicion of coronary artery disease in this case was based on extreme obesity, hypertension and glycosuria.)

3. A 36-year-old white male had no history of heart disease, and no such abnormality was observed on physical examination or in electrocardiograms. He remained apparently in good health for 19 months until severe crushing substernal pain developed with radiation down the left arm. After the pain had persisted for several hours he was hospitalized. Serial electrocardiograms made during four weeks of hospitalization were compatible with the diagnosis of anterior myocardial infarction.

For 16 males who had no clinical evidence of rheumatic or other non-coronary heart disease, and for whom electrocardiograms made after exercise gave no sign of abnormality, there were findings compatible with a diagnosis of coronary artery disease in electrocardiograms made at rest. Of these subjects, five had right or left bundle branch block. The others had abnormalities in the T, Q, or R waves or defective intraventricular conduction. These 16 were 3.04 per cent of the 526 males examined.

Of the 69 females under the age of 35 years who were examined, none had any history of cardiovascular disease or any indication of such disease observed in physical examination or in electrocardiograms made at rest, but six had positive response to the test in electrocardiograms made after exercise. In these six there was no evidence of neurocirculatory asthenia, unusual emotional reaction to the test, anemia, or other extracardiac factors which might have caused false positive reaction. These six were 8.7 per cent of all the females examined. Abnormalities observed electrocardiographically were as follows:

Age	Occupation	Electrocardiogram Made After Exercise*
24	Secretary	ST depression 0.75 to 1.0 mm. in V4, rate 98.
32	Stewardess	ST depression 0.75 to 1.0 mm. in standard lead II, rate 112.
22	Stewardess	ST depression 0.75 mm. in standard lead II and V4, rate 90.
22	Stewardess	ST depression 0.75 to 1.0 mm. in standard lead II and V4, rate 114.
27	Secretary	ST depression 0.75 mm. in standard lead III, rate 110.
26	Secretary	ST depression 0.75 to 1.0 mm. in standard leads II and III, rate 106 (Figure 2).

DISCUSSION

Of the men in this study who had no evidence of heart disease observed by other tests, the ten under the age of 40 years with positive response to the exercise test were 4.3 per cent of the 232 in their age group, and the man over 40 years of age was 0.6 per cent of the 169 in his age group. The possibility of undue anxiety at the time of the test can be reasonably excluded in the case of these 11 men, and such factors as thyroid or digitalis medication, abnormal tachycardia following exercise, or eating shortly before the test, which have been reported[5] as causing false positive results, were absent in all cases.

Master states[5] that positive findings in this test may be the only objective indication of coronary disease. The authors hesitate to conclude, however, that the 11 men had coronary artery disease, as the proportion of men under the age of 40 years with positive response to the test is relatively high as compared with the older group, a finding incompatible with the expectation for these ages.

In the case of the five men with hypertension, the electrocardiogram made immediately after exercise was the only one indicating possible association of hypertension with coronary artery disease. An adequate follow-up period will be necessary for evaluation of these findings, which have made the authors

*All abnormalities described occurred in tracing taken immediately after exercise and all returned to resting level within six minutes.

alert to the possibility of coronary artery disease in these persons but do not seem to justify a conclusive diagnosis. If false positive findings can be obtained in normal persons, it is reasonable to assume that such findings may also be obtained in those who have hypertension.

Of special interest by contrast is the finding of positive response in electrocardiograms made at rest in 16 persons who had negative response after exercise—apparently a detection rate approximately four times as great as that for the exercise test. This proportion is of course somewhat conjectural, since in either group there is a possibility of false positive response. This possibility is further confirmed by the findings in healthy young women. Indeed, the electrocardiograms which were interpreted as positive in this series would have been considered negative by the stricter criteria of other investigators than Master.[8] Depression of the ST segment, which was the most frequent change in the electrocardiograms, was nowhere greater than 1.5 mm. From the frequency with which depression as great as 1 mm. occurs in apparently normal persons it seems likely that this result should be considered within normal range.

The possibility of false negative results, emphasized by the frequency of negative results in men over 40 years of age, must be considered even in the case of the three men in whom coronary artery disease was diagnosed or strongly suspected. Adequate follow-up of all cases with negative findings will be necessary to clarify this aspect of the problem.

As most of those examined had apparently normal hearts, the authors cannot evaluate the test as an aid in the differential diagnosis of pain in the chest or in the study of patients with overt cardiac disease or coronary insufficiency. In evaluating the test as an aid in the detection of unsuspected coronary artery disease at the time of routine periodic examination, it must be kept in mind that coronary artery disease can be present without causing symptoms of coronary insufficiency. It is probable that many persons who have atherosclerosis of the coronary artery—and who might at any moment have coronary occlusion—have "adequate" coronary flow after exercise, insofar as adequacy can be determined from clinical history and examination. In such circumstances the result of the test might be negative even though the person tested was a candidate for myocardial infarction.

CONCLUSIONS

On the basis of the findings in the study here reported, the following conclusions seem justified:

1. In tests on an average group of persons, a significant number of electrocardiograms made after the two-step exercise have a depression in the ST segment of over 0.5 mm. Therefore a standard of 1.0 to 1.5 mm. for this reading would be a better index of coronary artery disease and would be less likely to lead to false positive interpretation.

2. A negative finding in a double two-step exercise test does not exclude the possibility of latent coronary artery disease or of coronary occlusion.

3. The usual 12-lead electrocardiogram made at rest appears to be of more value than the electrocardiogram made after exercise in the detection of latent coronary artery disease in apparently normal persons.

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Palm Thorn Injuries

Difficulty in Diagnosis of Late Sequelae

LEWIS COZEN, M.D., and MAXWELL FONDA, M.D., *Los Angeles*

• Injuries in which palm thorns become embedded in soft tissues or cartilage, leaving no external evidence of their presence, sometimes present a baffling diagnostic problem. A high index of suspicion is the most important aid in diagnosis. Laboratory findings are not helpful and rarely can conclusive diagnosis be made from clinical examination. Surgical excision of the buried thorn is the only satisfactory treatment.

IN SOUTHERN CALIFORNIA where sharp-tipped palm fronds lie beneath trees in many places that children use for play, puzzling problems in diagnosis sometimes are posed by lesions caused by the unsuspected presence of a palm thorn that remains embedded in deep tissue, perhaps in or near a bone, after the site of penetration has healed.

For synopsis and illustration of the various features and circumstances in such cases:

A child at play falls upon a palm leaf and a cone shaped thorn (or thorns) penetrates the skin, usually at the knee, and breaks off. A parent, examining the wound, may not see the thorn if it is broken beneath the surface of the skin, or may withdraw one that is visible and leave another that is concealed. A few days later there may be swelling at the site of injury and the child may limp and complain of pain. A physician examining the child finds no indication of trauma, for the puncture wound is by then completely healed. He may note some effusion of the knee joint (if that is the area involved) and some limitation of motion of the joint. There will be no fever, no leukocytosis, no acceleration of

From the Clinics of the Orthopedic Hospital, Los Angeles.

TABLE 1.—*Data on 11 cases of lesions developing from palm thorn wounds*

Case No.	Age and Sex	Area Involved	Diagnosis	Treatment	Result with Time Since Last Visit
1	10 M	Knee	History of palm thorn injury	Aspiration	3 months—normal
2	13 F	Middle of tibia	History of palm thorn injury	Excision of thorn in soft tissues of calf	9 years—normal
3	3 F	Knee	History of palm thorn injury	Excision	3 months—normal
4	12 M	Knee	History of palm thorn injury	Excision of thorn	4 months—normal
5	14 M	Foot	History of palm thorn injury	Excision of thorn	3 months—apparently normal
6	4 M	Lateral calf	Indefinite swelling of calf for 4 months	Excision of thorn. Exploration of fibula 2 months later	8 months—normal
7	9 M	Knee and ankle	History of palm thorn injury	Excision of thorn from knee and ankle	3 weeks—almost normal
8	11 M	Knee	History of palm thorn injury	Excision	1 month—almost normal
9	14 M	Knee	Indefinite	Irrigation of joint. Excision of thorn one month after first admission and irrigation.	Follow-up not available
10	11 M	Foot	Indefinite	None	Follow-up not available
11	5 M	Knee	Indefinite	Operative removal of 2 thorns from within knee joint	6 months



Figure 1.—Appearance of the fibula (Case 2) three years after accidental insertion of palm thorn adjacent to it.

the erythrocyte sedimentation rate, and at this stage no abnormality observable in x-ray films. Aspirated fluid will contain a slightly higher than normal

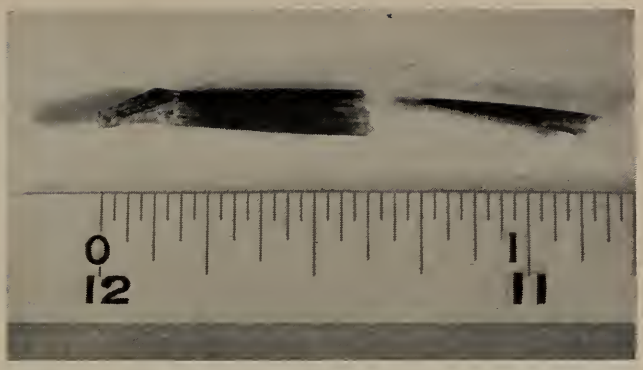


Figure 2.—These two large thorns were removed from the knee joint (Case 11). Presence of these palm thorns was difficult to ascertain by history.

number of leukocytes, but no organisms. Sooner or later, when swelling persists, the swollen area will be surgically explored, the thorn removed, and the symptoms then rapidly subside.

At the Los Angeles Orthopedic Hospital eleven patients with palm thorn injuries have been treated during the past 12 years. Features of those cases are summarized in Table 1. A recent article by Maylahn pointed out the diagnostic difficulties when thorns are in or near bone. One of the three cases he reported is included in this series (Case 6, Table 1).

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COMMENTS

The thorn punctured the knee joint but did not enter it. Hence, aspiration of the knee was sufficient therapy.

Excision of thorn and primary closure was performed 4 years after injury. Slight pain and swelling persisted during that interval. X-ray films revealed sclerotic reaction of tibia as a result of the adjacent inflammatory process. Swelling at incised area persisted after operation for two years.

Details of history are not available.

This case illustrates need for exploration of the knee if the joint is swollen after history of thorn injury. Physicians who had previously examined the patient reported that the thorn had not been left in the joint.

History was indefinite, making diagnosis difficult. One palm thorn was removed at time of accident. Persistent swelling suggested presence of another thorn. This was found at operation and removed.

X-ray films showed sclerosis like that in Ewing tumor. History of palm thorn injury was indefinite.

Swelling did not subside until operative removal of thorns two months after accident.

One thorn was removed at time of accident. It was not certain that any others were left until persistent swelling necessitated exploration and removal of thorn.

Closed irrigation of the joint did not cause subsidence of swelling. Exploration of the knee joint revealed the presence of a thorn.

Persistent swelling indicated diagnosis of thorn still in knee joint.

Physician who first treated patient thought that only one thorn went into the knee and he removed it. Persistent swelling, however, indicated probability of other thorns in the joint, which were found on exploration.

The Prognosis in Cataract Operations

A Correlation of Preoperative Appraisal with Results

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• The preoperative and postoperative data on 500 cases in which cataracts were removed from the eyes were reviewed to correlate the results with the preoperative prognosis as determined by light identification and macular function tests. Another purpose was to consider the adequacy of various methods of preoperative appraisal.

The vision was improved to better than 20/200 in 89.4 per cent of the cases. In 5.6 per cent (28 cases) vision was improved but was 20/200 or less. In 5 per cent (25 cases) the operation was a failure, for various causes.

There was wide variation in methods used to determine the condition of the retina preoperatively by means of light identification and macular function tests, and there was no uniformity of terms used to describe degree of function.

A standardized method of estimating retinal function in the presence of cataract was used in 60 cases. The equipment used is simple and inexpensive. From analysis of preoperative determination of prognosis and the operative results, it would appear that this simple inexpensive procedure is more reliable in arriving at a preoperative prognosis than some of the methods frequently employed.

In 1939 the California State Legislature passed Section 3051 of the Welfare and Institutions Code authorizing the Department of Social Welfare to "provide treatment or operations to *prevent blindness* or *restore vision* to applicants for, or recipients of, Aid to the Blind . . ." The law states that, "This service shall be extended *only* to *those persons whose age* and *physical* and *mental condition* will *make such physical rehabilitation profitable to the individual.*"

The State Ophthalmologist is responsible for carrying out the intention and objectives of the law.

It therefore became a preoperative requirement to establish a prognosis indicating "preservation of vision" or "restoration of vision" before free treatment could be authorized.

Various methods of establishing a prognosis in the presence of cataract have been reported in the ophthalmological literature. The methods receiving the greatest recognition are those that were described by Duke-Elder,[1] Fuchs[2] and Young.[3] In all three methods, ability to distinguish points of light in various fields is used as a test of macular function.

In an effort to determine current procedures among California ophthalmologists, the author reviewed 500 preoperative reports on eyes from which cataracts were subsequently removed and compared them with the postoperative reports. The patients were all operated upon at the expense of the California State Department of Social Welfare. In 25 cases (5 per cent) useful vision was not restored. Of those operated on, 89.84 per cent had visual acuity of better than 20/200 90 days after operation. Five and six-tenths per cent had visual acuity of 20/200 or less but vision was improved enough to enable the patients to care for their personal needs.

The survey noted specifically the preoperative estimate of macular function and the method employed in making such estimate, as well as the method used in reporting "light projection," the compass of the visual field in which the direction of points of light can be seen. An effort was made to correlate the postoperative visual results and the condition of the fundus observed 90 days after operation with the preoperative report of macular function and light projection.

The author is the State Ophthalmologist of California.

Thirty surgeons, all diplomates of the American Board of Ophthalmology, participated in the surgical program. They reported on macular function in 484 eyes and on light projection in 417 eyes. Light projection was determined in most cases by the use of the ophthalmoscope light, although a few noted the use of a small flash light. Macular function was determined by the use of two points of light or a combination of two or more points of light, one of them red. Occasional examiners (not surgeons) questioned the value of the two-point light test. There was no uniformity or standardization of methods of making these tests or of terminology of reporting results.

The various terms used to describe light projection and the number of cases described by each term are listed in Table 1. Table 2 gives similar data with regard to reporting of macular function.

TABLE 1.—*The various terms used in recording light projection and the number of cases described by each term*

Measured in degrees	186	Limited	2
Full	138	Questionable	4
Normal	35	Uncertain, faulty or impaired	3
Good	27	Nasal defect	1
Accurate	4	Not sufficient	1
Excellent	4	No report	83
Satisfactory	6		
Fair	5		
Restricted	2	Total	500

TABLE 2.—*Terms used to record macular functions and the number of cases described by each*

Distance between two lights when separation was first recognized. (No indication as to distance the lights were from eyes)	162	Prompt	9
Distance between two lights when separation was first recognized, together with the distance from the eyes	116	Fair	6
Good	34	Poor	8
Normal	30	Doubtful, questionable or uncertain	9
Satisfactory	8	Defective	1
Present	6	Two lights horizontal	1
Excellent	7	Measured in degrees	6
Positive	4	1-2-4° red and white	39
		Separation of red and white	21
		Impossible, absent, or "too dense"	17
		No report	16
		Total	500

POSTOPERATIVE VISUAL RESULTS

Failure to improve vision (Table 3) occurred in 25 of the 500 cases. Twelve of the failures were owing to ocular complications occurring at or subsequent to operation (Table 4). Preoperative determinations of macular function and light projection in these 12 cases were not pertinent to the final outcome.

Thirteen of the failures (Table 5) were owing to pathologic conditions that apparently were present before operation. Four of the patients had glaucoma. Macular function and light projection were not recorded in one case and were recorded as "good" or "normal" in two cases. They were described by measurements in only one case (Case 24) but the two-point light differentiation at 10 mm. without indication of the distance from the eye provided no information upon which to estimate the extent of functioning retina in the macular area. Light projection, reported as 125° in that case, should indicate only moderate restriction of the visual fields. However, postoperative findings did not substantiate this. Visual acuity before operation was 20/100; after operation there was light perception only. It is possible that this reduction in vision could be attributed to the surgical procedure.

TABLE 3.—*Data on operations considered failures*

Case No.	Age	Visual Acuity		Pathologic Condition*		Macular Function**	Light Projection†
		Preop.	Postop.	Postop. Eye	Preop. Systemic		
1	82	1/200	5/200	670	74	1 inch	80°
2	64	H.M.	3/200	620	72	Normal	Normal
3	89	L.P.	No L.P.	130		Normal	80°
4	79	20/200	20/200	660		5 mm. at 2 ft.	130°
5	75	L.P.	L.P.	420	72	‡R&W 1-2-4°	Good
6	71	L.P.	No L.P.	110			
7	72	20/400	20/400	110		Normal	Normal
8	74	H.M.	L.P.	121		Normal	70°
9	68	L.P.	L.P.	650		2 cm.	Full
10	86	L.P.	L.P.	420		Normal	Normal
11	67	H.M.	L.P.	420-110		3 cm.	Full
12	77	L.P.	L.P.	Died		Good	Good
13	64	L.P.	L.P.	640			
14	72	L.P.	No L.P.	330		Good	Good
15	69	L.P.	L.P.	110		Good	Normal
16	81	H.M.	H.M.	670	74	2 lts. horizontal	
17	71	C.F.	No L.P.	650	72-74	Present	80°
18	60	L.P.	L.P.	640	72	No	120°
19	77	L.P.	L.P.	420	72-74	Present	
20	79	L.P.	C.F.	670		Good	
21	67	L.P.	L.P.	650		3 inches	120°
22	62	10/200	L.P.	640		1 cm.	100°
23	69	L.P.	L.P.	650		5 cm.	130°
24	71	24/100	L.P.	110		10 mm.	125°
25	64	20/200	L.P.	Epithelial Ingrowth		1 cm. at 1 m.	Normal

*Numbers under columns headed "Pathologic Condition" are in accord with the Standard Classification of Causes of Blindness published by the Federal Security Agency: 110=Glaucoma, 130=Panophthalmitis, 121=Myopic choroidal degeneration, 420=Iridocyclitis, 330=Corneal ulcers, 620=Retinitis, 630=Choroiditis, 650=Choroidal hemorrhage, 660=Retinal degeneration, 670=Arteriosclerotic retinitis, 710=Optic atrophy, 72=Diabetes, 74=Arteriosclerosis.

Abbreviations: HM=Hand motion. CF=Count fingers. LP=Light perception.

‡Measured by simple method explained in text, page 47.

†Compass of visual field within which the direction of points of light held before the eye can be seen.

**Macular function was described by a variety of terms, many of them inexact and difficult to interpret.

Three failures were owing to preexisting retinal detachment. In one of these (Case 13, Table 5) neither macular function nor light projection was recorded. In another (Case 18) there was no macular function present before operation but there was a light projection field of 120°. The patient had diabetes. The prognosis was doubtful, but operation was resorted to in light of the extreme handicap of the individual. In the third case of retinal detachment (Case 22) macular function was reported as "two-point light discrimination at 1 cm." As the distance of the light from the eye was not stated, there is no information upon which to estimate the extent of functioning retina in the macular area. Light projection was recorded as 100°. Visual acuity before operation was 10/200; after operation, light perception only.

In three cases failure was owing to arteriosclerotic retinitis. In two of these the internist diagnosed widespread arteriosclerosis in the preoperative report. In only one of these cases (Case 1, Table 5) was an effort made to record a precise estimate of macular function. The report of "two-point light discrimination at 1 inch" is again inadequate. The statement "two light horizontal" has no precise significance. Apparently "good" in the third case was inaccurate.

Diabetic retinitis was the cause of failure in one case (Case 2). Macular function and light projection were recorded as normal. It is possible that retinal lesions developed between the date of the presurgical examination and the final refraction.

In another case (Case 4) failure was owing to retinal degeneration. Visual acuity before and after operation was 20/200. The postoperative report indicated senile macular degeneration. The patient, 79 years of age, had other symptoms of senile mental degeneration. The measured distance of two point light discrimination was 5 mm. at 2 feet from the eye, and light projection of 130° was recorded. This was the basis of a good prognosis. In this case six months intervened between the preoperative and the postoperative reports. Progress of the retinal lesion during that interval is a probability.

One failure was owing to myopic choroiditis (Case 8). The patient, aged 74, could see hand motions before operation and had light perception postoperatively. Macular function was recorded as "normal" and light projection as 70°. The estimate of "normal" was not substantiated by the postoperative results.

In these 13 failures it would appear that the preoperative record did not accurately state macular function. In the only case in which there seemed to be an accurate and complete record of preoperative findings (Case 4) failure to improve vision was owing to progress of systemic disease in addition to the ocular condition. Question is raised as to whether a more scientific method of estimating and recording macular function would have influenced the appraisal of prognosis in these cases.

Table 6 lists 28 cases in which visual acuity was improved to 20/200 or less. A prognosis of "questionable" based upon impaired two-point light discrimination and, in three cases, impaired light projection, was substantiated in nine of these cases (Nos. 4, 6, 9, 10, 13, 14, 20, 21, and 22). In Case 4, "very poor" macular function was recorded. Postoperative examination revealed chorioretinitis: visual acuity was 10/200. In Case 6 two-point light discrimination at 18-inch separation was recorded, but the distance of the light from the eye was not indicated. This was the basis of a questionable prog-

TABLE 4.—*Failures owing to postoperative complications*

Case No.	Age	Visual acuity—Preop.	Visual acuity—Postop.	Pathologic Condition*—Eye	Pathologic Condition*—Systemic Preop.
9	68	L.P.	L.P.	650	
17	71	C.F.	No L.P.	650	
21	67	L.P.	L.P.	650	72-74
23	69	L.P.	L.P.	650	
5	75	L.P.	L.P.	420	
10	86	L.P.	L.P.	420	72
11	67	H.M.	L.P.	420	
19	77	L.P.	L.P.	420	72-74
14	72	L.P.	No L.P.	330	
25	64	20/200	L.P.	Epithelial ingrowth	
3	89	L.P.	No L.P.	130	
12	77	L.P.	L.P.		

*See Table 3 for explanation of code numbers.

Abbreviations: LP=Light perception. CF=Count fingers. HM=Hand motion.

TABLE 5.—*Failures owing to ocular disease present before operation*

Case No.	Age	Macular* Function	Light Projection**	Visual Acuity—Preop.	Visual Acuity—Postop.	Pathologic Condition†—Eye	Pathologic Condition†—Systemic
6	71			L.P.	L.P.	110	
7	72	Normal	Normal	20/400	20/400	110	
15	69	Good	Normal	L.P.	L.P.	110	
24	71	10 mm.	125°	20/100	L.P.	110	
13	64			L.P.	L.P.	640	
18	60	No	120°	L.P.	L.P.	640	72
22	62	1 cm.	100°	10/200	L.P.	640	
1	82	1 inch	80°	1/200	5/200	670	74
16	81	2 light horizontal		H.M.	H.M.	670	74
20	79	Good		L.P.	C.F.	670	
2	64	Normal	Normal	H.M.	3/200	620	72
4	79	5 mm. at 2 feet	130°	20/200	20/200	660	
8	74	Normal	70°	H.M.	L.P.	121	

†See Table 3 for explanation of code numbers.

**Compass of visual field within which the direction of points of light held before the eye can be seen.

*Macular function was described by a variety of terms, many of them inexact and difficult to interpret.

Abbreviations: LP=Light perception, HM=Hand motions.

TABLE 6—*Cases in which visual acuity was improved to 20/200 or less*

Case No.	Visual Acuity		Pathologic Condition*		Macular Function**	Light Projection†	Preop. Prognosis
	Preop.	Postop.	Postop. Eye	Preop. Systemic			
1	L.P.	20/200			5 cm. at 1 m.	110°	
2	L.P.	20/200	710	74	1 inch at 20 feet	Full	
3	L.P.	20/200	630		Present	Full	
4	L.P.	10/200	630		Very poor	90°	Questionable
5	H.M.	20/200	670		½ cm. at 1 m.	100°	
6	L.P.	20/300	660		18 inches		Questionable
7	H.M.	10/200	630		1 cm.	Good	
8	L.P.	20/200	620		1 cm.	120°	
9	H.M.	20/200	660-91		1-2-4° R&W	20°	Questionable
10	L.P.	3/200			W&W 3 cm. at 13 inches	Full	Questionable
11	L.P.	20/400	620-72		Good	Fair	
12	H.M.	20/200	620		Good	Good	
13	H.M.	20/200	110		Uncertain	Restricted	Questionable
14	H.M.	20/200	640		Uncertain	Uncertain	Questionable
15	L.P.	20/400	630		Satisfactory	Satisfactory	
16	L.P.	20/400			5 cm. at 1 m.	110°	
17	H.M.	20/200	670				
18	L.P.	20/200	670		1 inch at 1 m.	Good	
19	L.P.	20/300	110		2 cm. at 1 m.	Full	
20	L.P.	20/200	620-72		2-4° R&W	Full	Questionable
21	L.P.	10/200	340		Impaired	Good	Questionable
22	L.P.	20/200			No	80°	Questionable
23	L.P.	5/200	670	74		80°	
24	H.M.	10/200	670	74	Normal	110°	
25	H.M.	20/200	121		3 cm.	90°	
26	L.P.	20/400	620	72	Normal	Normal	
27	H.M.	8/200	630		1 inch at 1 foot	90°	
28	C.F.	10/200	660		1 cm. at 1 m.	130°	

*See Table 3 for explanation of code numbers.
†Compass of visual field within which the direction of points of light held before the eye can be seen.
**Macular function was described by a variety of terms, many of them inexact and difficult to interpret.
Abbreviations: LP=Light perception, HM=Hand motions, CF=Count fingers.

nosis. After operation visual acuity was 20/300, and retinal degeneration was noted.

Macular function was described as "1-2-4° red and white"† in Case 9, and light projection was limited to 20°. Postoperative examination revealed retinitis pigmentosa. Central visual acuity was 20/200. The restricted field was diagnosed before operation.

In Case 10 two-point light discrimination was recorded as "3 cm. at 13 inches" and light projection as "full field." Prognosis was questionable. Postoperative visual acuity was 3/200 with no ocular pathologic condition to account for the impairment. The patient was well satisfied with the improvement.

In Case 13 "uncertain" macular function and "restricted" light projection were recorded preoperatively. After operation, visual acuity was 20/200 and glaucoma was present.

Macular function and light projection were recorded as "uncertain" in Case 14. Detached retina was noted on postoperative examination. Central visual acuity was 20/200.

In Case 20 macular function was recorded as 2-4° red and white, and light projection as "full fields."

†This description of function and the method used to determine it are explained later in this presentation.

Impaired macular function was verified by the postoperative examination in which diabetic retinitis was noted.

Impaired macular function and good light projection were recorded in Case 21. Postoperative vision was 10/200. Corneal dystrophy was noted. In Case 22 inability to make two-point light discrimination was recorded, and the light projection field was 80°. Prognosis was questionable. Postoperative visual acuity was 20/200 and there was no apparent pathologic condition of the eye to account for the impaired vision.

Two-point light discrimination was recorded in Cases 7, 8 and 25 but the distance of the light from the eye was not stated. In those cases lesions in the fundus were observed after operation.

In two cases (17 and 23) no estimate of macular function was recorded. Arteriosclerotic retinitis was noted after operation and in both the visual acuity was less than 20/200.

In the other 14 cases in which visual acuity was not improved to more than 20/200 the preoperative prognosis was good, based upon either a specified measured two-point light discrimination at a specified distance or a statement that it was "good," "present," "normal," or "satisfactory." However, fundal disease was noted at postoperative examina-

tion. Here, again, would a better estimate of macular function have contributed to a more accurate appraisal of prognosis?

Pathologic change involving the fundi was noted at postoperative examination in 34 cases in which visual acuity was better than 20/200. In one of those cases the preoperative report indicated "poor" macular function. After operation visual acuity was 20/100 and the presence of retinitis was noted. Macular function was not reported in one of the cases but in all of them visual acuity was better than 20/200 and visual fields were greater than 20° after operation. The various pathologic conditions noted at postoperative examination and the incidence of each were as follows: Arteriosclerotic retinitis, 10; diabetic retinitis, 6; choroiditis, 6; retinal degeneration, 5; glaucoma, 3; myopic choroidal degeneration, 2; optic atrophy, 2.

In 32 of these 34 cases (the two exceptions were previously noted) a satisfactory measured macular function or a description of it as "normal," "good," or "satisfactory," was recorded. This would indicate that present tests for macular function and light projection do not supply adequate indication of the presence of fundal lesions.

Does the absence of two-point light discrimination contraindicate operation? Table 7 lists the postoperative results in 16 cases in which the preoperative report indicated that the patient did not have two-point light discrimination. In all but three cases, however, good light projection was present. In Case 2 (Table 7) light projection was recorded as "inaccurate," and in Cases 10 and 11 it was not recorded. In only one of the 16 cases did operation fail to restore useful vision. In that case, "good light

TABLE 7.—*Postoperative results in cases in which no macular function was present*

Case No.	Macular Function**	Light Projection†	Visual Acuity Preop.	Visual Acuity Postop.	Ocular Disease*
1	No	Good	L.P.	L.P.	640
2	No	Inaccurate	L.P.	20/40	
3	Absent	Accurate	L.P.	20/200	
4	No	95°	L.P.	20/50	670
5	No	80°	L.P.	20/200	
6	No	140°	L.P.	20/60	
7	No	80°	H.M.	20/70	670
8	No	65°	L.P.	20/30	
9	Doubtful	60°	H.M.	20/70	670
10	Too Dense		L.P.	20/20	
11	Negative		L.P.	20/30	630
12	No	90°	L.P.	20/30	
13	No	Full	L.P.	20/25	
14	No	140°	L.P.	20/25	
15	No	120°	H.M.	20/20	
16	No	120°	L.P.	20/50	

*See Table 3 for explanation of code numbers.

†Compass of visual field within which the direction of points of light held before the eye can be seen.

**Macular function was described by a variety of terms, many of them inexact and difficult to interpret.

Abbreviations: LP=Light perception, HM=Hand motions.

TABLE 8.—*Data on 60 cases in which function of retina was determined preoperatively by "1-2-4° red and white" test (Details of test, page 47)*

Case No.	Macular Function	Light Projection*	Visual Acuity Preop.	Visual Acuity Postop.	Ocular and Systemic Disease*
1	1-2-4° R&W	Full	3/200	20/30	
2	1-2-4° R&W	Full	C.F.	20/25	
3	1 cm. R&W	Full	3/400	20/20	
4	1-2-4° R&W	Full	20/200	20/60	
5	R&W at 3 cm.	Full	1/200	20/30	
6	1-2-4° R&W	Full	C.F.	20/20	
7	1-2-4° R&W	Full	L.P.	20/30	
8	1-2-4° R&W	Full	H.M.	20/20	
9	1-2-4° R&W	Full	C.F.	20/20	
10	1-2-4° R&W	Full	L.P.	20/50	
11	1-2-4° R&W	Full	H.M.	20/20	
12†	1-2-4° R&W	Restricted	L.P.	20/100	
13	R&W at 3 cm.	Limited	L.P.	20/30	
14	1-2-4° R&W	Full	6/200	20/40	
15	1-2-4° R&W	Full	C.F.	20/20	
16	R&W at 3 cm.	Full	L.P.	20/50	
17	1-2-4° R&W	Full	H.M.	20/20	
18	R&W at 3 cm.	Full	L.P.	20/25	
19	1-2-4° R&W	Full	1/200	20/30	
20	1-2-4° R&W	Full	H.M.	20/30	
21	1-2-4° R&W	Full	2/200	20/25	
22	R&W at 3 cm.	Full	H.M.	20/30	
23	1-2-4° R&W	Full	C.F.	20/20	
24	1-2-4° R&W	130°	L.P.	20/60	
25†	1-2-4° R&W	20°	H.M.	20/200	660-91
26	1-2-4° R&W	Full	3/200	20/40	
27	R&W at 1 cm.	Full	L.P.	20/25	
28	1-2-4° R&W	Full	L.P.	20/30	
29	1-2-4° R&W	Full	L.P.	20/20	
30	1-2-4° R&W		L.P.	20/30	660
31	2-4° R&W	Full	H.M.	20/20	
32	R&W at 4 cm.	110°	L.P.	20/25	
33	R&W at 3 cm.	Full	1/200	20/40	
34	1-2-4° R&W	Good	L.P.	L.P.	420-72
35‡	1-2-4° R&W	Impaired Upper & Temporal	3/200	5/200	121-640
36	1-2-4° R&W	Full	2/200	20/20	670
37	1-2-4° R&W	Full	2/200	20/20	
38†	2-4° R&W	Full	L.P.	20/200	620-72
39	1-2-4° R&W	Full	L.P.	20/25	
40	1-2-4° R&W	Full	10/200	20/20	
41	R&W at 3 cm.	Full	H.M.	20/20	
42	1-2-4° R&W	Full	5/200	20/20	
43†	1-2-4° W only	Full	L.P.	20/200	660
44	R&W 3 cm.	Full	L.P.	20/25	
45	1-2-4° R&W	Full	1/200	20/50	620-72
46	R&W 3 cm.	Limited	H.M.	20/20	
47	1-2-4° R&W	Full	H.M.	20/25	
48	R&W 3 cm.	Full	H.M.	20/70	
49	R&W 3 cm.	120°	2/200	20/20	
50	R&W 3 cm.	Full	H.M.	20/25	
51	R&W 3 cm.	Full	3/200	20/20	
52	R&W 3 cm.	Full	16/200	20/50	630
53	R&W 6 cm.	Full	20/200	20/20	630
54	R&W 3 cm.	Full	1/200	20/30	
55	R&W 3 cm.	Full	H.M.	20/20	
56	1-2-4° R&W	Normal	20/200	20/50	
57	1-2-4° R&W	Normal	H.M.	20/20	
58	1-2-4° R&W	110°	L.P.	20/30	
59	1-2-4° R&W	Full	H.M.	20/50	
60	R&W 3 cm.	Full	1/200	20/30	

*See Table 3 for explanation of code numbers.

Preoperative Prognosis: †Questionable. ‡Poor.

Abbreviations: LP=Light perception, HM=Hand motions, CF=Count fingers.



Figure 1.—Simple device for determination of macular function and compass of light perception. A perforated disc with a shutter so hinged that some of the holes can be occluded as necessary, it is mounted over the lens of a flashlight.

projection" was reported before operation, but retinal detachment was noted postoperatively and visual acuity remained as it was before. Visual acuity in two cases (3 and 5) was improved to only 20/200. No pathologic condition to which the limited result could be ascribed was noted in either of them.

The results would indicate that the absence of two-point light discrimination when light perception and good light projection are present does not foreclose hope that useful vision can be restored.

Does a more precise examination of macular function and light projection supply information upon which a more reliable prognosis can be established? Table 8 lists 60 cases in which beams of white and red light were used to establish an angular measurement of functioning retina. The equipment and methods of procedure will be described later in this discussion.

In one case (Case 34, Table 8) in which the preoperative prognosis was good the operation failed, owing to the development of iridocyclitis postoperatively. The patient was diabetic. Visual acuity both before and after operation was "light perception." Red and white discrimination of 1-2-4° was reported in Case 25, but light projection was limited to 20°. The prognosis was stated as "questionable" and the result showed that the doubt was warranted; visual acuity was improved to only 20/200 and retinitis pigmentosa was diagnosed postoperatively. Red and white discrimination was only 2-4° in Case 38. Light projection was described as "full field." Postoperative examination revealed diabetic retinitis. Visual acuity was 20/200. In Case 43 there was 1-2-4° white light discrimination but no recognition of red. Retinal degeneration was noted at postoperative examination. Visual acuity was 20/200.

In Case 35 the patient had 1-2-4° red and white light discrimination but impaired light projection in the upper and temporal fields and the prognosis was deemed poor. The patient insisted upon operation. Upon postoperative examination myopic choroiditis was noted. Two years later retinal detachment occurred. The patient in Case 12 had 1-2-4° red and white discrimination with restricted light projection fields. The prognosis was "questionable." Visual acuity after operation was 20/100 and no definable retinal lesions were noted.

The prognosis was good in 55 of the 60 cases in which angular measurement of macular function, color discrimination tests and careful delineation of light projection fields were carried out. In 54 of them useful vision was present at the time of postoperative examination. The one failure was owing to postoperative iridocyclitis.

SIMPLE PROCEDURE TO DETERMINE EXTENT OF FUNCTIONAL RETINA

When the program for visual rehabilitation was first started in 1940, the State Ophthalmologist was called upon to examine applicants for removal of cataracts in all 58 counties of the state. Portable equipment designed to facilitate and simplify the examination wherever possible without sacrificing accuracy became necessary. The expense involved in transportation of the patient to the surgical centers made the preoperative prognosis of major importance. A simple, standardized test to investigate and record macular function and light projection was essential. Descriptions of the "home made" equipment used in making the preliminary examinations were soon requested by the cooperating ophthalmologists. Later, Parsons Optical Laboratories, 518 Powell Street, San Francisco, made the equipment available to the profession.

The method and the equipment combine the use of red and white beams of light in accord with the suggestions of Fuchs and Duke-Elder. A bakelite disc perforated by five holes is placed over the lens of a flashlight of convenient size (Figure 1). The light is designed for use at 13 inches from the eye. All the holes are 1 mm. in diameter and are so placed as to subtend an angle of 1°, 2°, and 4° when held 13 inches from the eye. The central hole has a red cover. Six millimeters on each side of the central red light are holes that transmit white light. Two holes are placed 12 mm. from the red on an axis of 90° from the line connecting the two white light openings and the red light opening previously mentioned. The distance for 1° at 13 inches is arrived at by using the natural tangent of 1° (.01746) multiplied by the distance, 13 inches (333 mm.). This equals 5.8141 mm. Six millimeters

is the nearest practical measurement for construction purposes. The distance of 12 mm. is derived in the same manner. An occluder is so mounted on the disc as to enable the operator to occlude all white lights when desirable. An ordinary pencil flashlight with a black hood perforated by a hole 0.5 mm. in diameter is used as an accessory light to determine the light projection. In use the light with all holes open is held 13 inches from the eye in a dark room. If the patient readily recognizes the one red and four white lights, the record is entered as "1-2-4° red and white light discrimination." This would indicate functioning retina, 1°, 2°, and 4° from fixation. Inability to recognize red or the 1° light may indicate impaired macular function. Inability to recognize any of the lights may indicate a cataract too dense to transmit individual rays of light. In this condition the occluder is adjusted to close the four white openings. The red is then used for fixation and the accessory light is used to determine the minimum distance of separation at which two lights are recognized. This is recorded as red and white at the distance between the two lights. Example: Red and white at 4 cm. The red light is also used for fixation, and the accessory light is used in determining the extent of the light projection fields.

This equipment has proven useful, it is inexpensive, and the results obtained are more reliable than some of those obtained by more elaborate procedures.

727 West Seventh Street.

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CASE REPORTS

- **Tetanus: Two Cases in Immunized Persons**
- **Paroxysmal Tachycardia in Early Infancy**

Tetanus: Two Cases in Immunized Persons

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THE EFFICACY OF IMMUNIZATION against tetanus is well established and the value of the procedure is attested by both the military experience of World War II and by the rarity of reports of cases occurring among immunized civilians. As with any valuable procedure it is desirable to recognize its limitations as well as its full field of usefulness.

It has been shown that either three injections of fluid toxoid, as used by the army, or two injections of alum precipitated toxoid, as used by the navy, produce effective immunity.[3, 4] It has also been demonstrated that an injection of a combination of tetanus toxoid, diphtheria toxoid, and killed Hemophilus pertussis organisms gives protective levels of tetanus antitoxin, even though the injections be carried out early in the first year of life, if the usual three injections are given at four-week intervals.[5]

Since the level of circulating antibody gradually decreases in the peripheral blood, it might be expected that tetanus would occur in attenuated form several years after immunization. It might also be expected that in some cases of overwhelming infection even large amounts of circulating antibody would not be adequate to give protection. The following two cases are illustrative in that in the first case immunization had been carried out nine years before and the patient had a mild onset suggestive of attenuation, and in the second a compound comminuted digital fracture was a likely source of overwhelming infection.

CASE 1: A 45-year-old repairman entered the hospital on November 3, 1951 complaining of severe pains in the legs. Illness had begun four days before with headache, fever, malaise, and prostration. Later stiffness of the neck and pain in the back developed, then photophobia, nausea and vomiting. On the day of entry several spasms of the calf and abdominal muscles commenced and were the most disturbing symptoms. The patient had intense thirst, but drinking water caused vomiting and a squeezing sensation in the throat. He complained of tightness in the muscles of the chest.

The patient had had routine tetanus immunization in the army in 1942 but no later booster injections. He was discharged from the army because of cardiac arrhythmia. His work at the time of the present illness consisted of repairing fixtures, window screens, and the like and of burning trash at a sanitarium for elderly patients.

When examined upon admittance the patient was almost crying at times from painful cramps in the legs. The temperature was 98 degrees F., the pulse rate 90 and respirations 26 per minute. Pupillary reactions and extraocular muscles were normal. The ears, nose and throat were essentially normal. There was no facial weakness and no trismus. A low-pitched diastolic murmur was present over the mitral area. The left border of the heart was at the midclavicular line in the fifth interspace. The lungs were clear.

Occasional clonic contractions of the abdominal wall were noted but between contractions the abdomen was soft and no organs were palpable. There was moderate spasm of the back and the patient exhibited a tripod sign when requested to sit. Pronounced, long-sustained tonic contractions of the gastrocnemius were observed bilaterally. No weakness was apparent. The deep tendon reflexes were symmetrical and hyperactive. On the legs were many healing abrasions and small pigmented areas but no single significant wound.

The hemoglobin content of the blood was 15 gm. per 100 cc. Leukocytes numbered 14,200—75 per cent polymorphonuclear cells. One cubic centimeter of Benedict's solution was not reduced with seven drops of spinal fluid, but three drops of fluid that was withdrawn the following day reduced the solution. There were no cells in either of the specimens of spinal fluid and results of Pandy tests were consistently negative. Auricular fibrillation was noted in an electrocardiogram. Administration of 10 cc. of 10 per cent calcium gluconate had no effect on the spasms. The spasms and meningismus persisted for the next two days and it was noted the cramps were produced by massaging the gastrocnemius. The patient vomited several times.

The third hospital day the cramps increased in severity and intercostal spasms caused respiratory embarrassment. The affected muscles did not relax fully between spasms. Tetanus was diagnosed and it was assumed that the infecting organism had entered through one of the numerous splinter cuts and abrasions on the lower extremities. The patient was given 200,000 units of tetanus antitoxin, 40,000 units of it intravenously. Chloral hydrate was given to control the contractions. Tolserol® was tried but when it was given intravenously the patient experienced general warmth, local aching at the site of injection and increase in contractions after the injection of 1 gm. over a ten-minute period. He was unable to retain the drug by mouth.

The contractions were well controlled with chloral hydrate except for three days from November 10 to 12 when there were several episodes of severe back spasm with opisthotonos and intercostal spasm with apnea for nearly one minute. The abdomen was soft during these episodes which were not well controlled by either Tolserol or chloral hydrate. The blood pressure remained at 120 mm. of mercury systolic and 70 mm. diastolic. There was no sign of cardiac failure at any time. After November 13 the patient improved gradually and continuously. On November 22 when he was transferred to a private hospital for convalescence the pains in the legs were subsiding and contractions had ceased.

CASE 2: A 10-year-old Caucasian male entered the hospital on September 16, 1951, with a history of having cut

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the left forefinger on a power-driven lawnmower 15 days before. The immediate treatment had consisted of cleansing, suturing and administration of penicillin. No tetanus toxoid nor antitoxin was given at the time of injury. Two days before admittance to hospital the patient complained that he was unable to open his mouth fully. On the day of entry he was noted to have a spastic gait but there had been no convulsions or tetanic contractions. The patient had received three injections of tetanus toxoid in early childhood and since had had one booster.

On examination moderate trismus was noted. The neck was supple and abdomen relaxed. The temperature was 99 degrees F. A dirty wound was present on the left index finger. The deep tendon reflexes were all hyperactive. A compound comminuted fracture of the distal phalanx of the left index finger was noted upon roentgen examination.

The finger was amputated through the distal one-third of the proximal phalanx and Clostridium tetani grew on culture of material from the wound in the amputated finger. The patient was given 160,000 units of tetanus antitoxin intramuscularly and 40,000 units intravenously. He also received 3,000,000 units of penicillin daily. Chloral hydrate, 1.2 gm. (20 grains) every two to four hours, controlled the contractions during the first three days. Then four severe contractions occurred and the dosage of chloral hydrate was increased to 1.5 gm. every two hours. On the sixth day thick mucus formed in the larynx, and when suction was applied contractions occurred. The temperature was 102 degrees F. On the eighth hospital day the patient was being given 1.0 gm. of chloral hydrate every two hours and there were a few mild contractions. On the ninth day a maculopapular rash and moderate general edema developed. Procaine intravenously and Benadryl® were given for the serum reaction. The edema and rash were clearing on the sixteenth hospital day but at this time more thick secretions formed in the throat and suction again caused contractions. Tracheotomy was carried out. Respiration was at first satisfactory but later in the day it became necessary to put the patient in a Drinker-Collins respirator. The temperature the next day was 101 degrees F.

When he was taken out of the respirator for a short interval eight days later (October 9), clonic contractions and generalized shaking occurred. The left arm was spastic. A lumbar puncture was done and 5 cc. of xanthochromic fluid was removed. On October 12 the patient had convulsions almost constantly even though deeply sedated with chloral hydrate. Finally he was given Tolserol® by mouth 1.0 gm. every 30 to 60 minutes for four hours with fairly good control. The dosage was then reduced to 1.0 gm. every two hours. After October 15 there were only a few mild contractions. However, the patient continued to have episodes consisting of conjugate deviation of the head and eyes to the left along with athetoid movements of the upper extremities as sedation began to wear off.

On October 23 he was removed from the respirator and when the pulse rate became rapid after three hours he was returned to it. Two days later he was removed again without incident. The patient then was in a poor nutritional state and there was a large decubitus ulcer over the sacrum. At first unresponsive and unable to feed himself, he gradually became more alert and in a few days had a ravenous appetite. On October 30 the pulse became rapid and irregular. Frequent ventricular premature systoles were noted on an electrocardiogram. The condition was controlled with procaine-amide which was given for two weeks. Aside from this interruption the course was one of steady improvement after the patient left the respirator. An electroencephalograph made November 14 showed no significant abnormalities. At the time of discharge November 23 the patient was alert, had normal intelligence, and no paralysis.

DISCUSSION

It is obvious that "immunization" did not prevent these two cases of tetanus. Some of the reasons are equally apparent but are worthy of emphasis to help prevent similar failures in the future.

In the first case nine years had elapsed since the first series of injections and no boosters had been taken in the interim. Bigler[1] was able to demonstrate tetanus antitoxin in all of the children he tested up to ten years after the initial immunization procedure. However, Boyd[2] observed that the speed of response to a booster injection of toxoid is slower in most instances if the booster is given more than four years after the initial series. By the same token the antibody response to infection should be less after that period of time. On this basis it would be indicated to give boosters every four to five years to anyone subject to frequent injuries, however minor.

A second observation which may be made from the first case is that the disease may be attenuated even several years following immunization. Recognition of that fact may aid in reaching early diagnosis with the attendant advantage of early therapy.

From the evidence in the second case, in which it seemed there was gross contamination from a severe wound on a finger, it would appear that the army practice of giving booster injections at the time of injury is desirable for civilian use also. In this connection it is notable that of the five reported cases in which members of the armed forces received boosters when they were wounded and later contracted tetanus, three of the patients had gunshot wounds of the foot, one had a compound fracture, and one had a crushed foot.[2] From this it appears that infected fractures are a potent source of tetanus toxin and that circulating antibodies from routine immunization may be inadequate. Appropriate surgical care of all contaminated or infected fractures is still one of the cornerstones of tetanus prophylaxis. If tetanus develops from infection at the site of a fracture, amputation is indicated as the only adequate means of dealing with the infection.

SUMMARY

Two cases of tetanus in persons who had had toxoid injections for immunization are reported. In one patient who had had immunization injections nine years previously and no booster in the interim, the disease was of attenuated nature and was not diagnosed immediately. The other apparently had received overwhelming infection at the site of a severe wound and fracture of the finger and had not been given tetanus toxoid or antitoxin at the time the wound was debrided and sutured.

Route 5, Box 482.

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Paroxysmal Tachycardia in Early Infancy

Treatment with Large Doses of Quinidine

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THERE are reports in the literature of more than 150 cases of paroxysmal tachycardia in the pediatric age group, and the incidence is probably much greater than this figure would indicate. Etiologic factors, symptoms and prognosis are so much different in young infants than in older persons that the condition has been considered as a separate entity. Nadas and co-workers[4] indicated that this "entity" should more accurately be limited to infants four months of age or younger. In observation of 25 cases in infants of this age group they noted that in the majority of cases no etiologic factor was determined, a high proportion of the patients were boys, symptoms of congestive heart failure were usually present, and there was a low incidence of recurrence beyond one year after the initial episode.

In an earlier communication, Hubbard[2] said that the patients although desperately ill usually respond promptly to digitalis and sometimes recover even without treatment. Since that time, however, it has been recognized that in an occasional case drugs other than digitalis are needed.

REPORT OF A CASE

A boy, born normally at term after uneventful pregnancy, progressed favorably until, on the 14th day, he refused feedings, vomited and became febrile. The following day tachypnea, cyanosis and listlessness were noted. The symptoms increased in severity and the child was hospitalized.

On examination the infant was observed to be severely dyspneic, pale and listless and he appeared to be critically ill. The pulse rate was 200 per minute. No murmurs were audible. Moist rales were present at the bases of the lungs. The liver was palpable four finger-breadths below the costal margin. Considerable enlargement of the heart was noted in an x-ray film. An electrocardiogram showed supraventricular paroxysmal tachycardia with a rate of 220.

The infant was placed in an oxygen tent and 0.1 mg. of digitoxin was administered intramuscularly. This was repeated every six hours for three doses. After 14 hours there was no improvement. Quinidine was then given orally in doses of 15 mg. repeated every eight hours. After the second dose of quinidine, the paroxysm was broken. The child was discharged, remained well for two weeks, then had another paroxysm which was followed by numerous recurrences. Many subsided spontaneously but sometimes as much as 200 mg. of quinidine in a single intramuscular dose was necessary to break the paroxysm. The patient had, in all, 61 paroxysmal episodes. It was finally discovered that a maintenance dose of 64 mg. of quinidine orally every four hours was necessary to prevent paroxysms. The dosage was gradually reduced and the medication finally discontinued when the child was 14 months old. He was examined a month later and his general condition was excellent. The weight was 27 pounds, 4 ounces, and the height 32¼ inches. No cardiac abnormalities were noted upon auscultation, fluoroscopic examination or electrocardiographic tracing. There had been no paroxysms for ten months.

DISCUSSION

Although in general the prognosis for infants under four months of age who have paroxysmal tachycardia is excellent, it should be borne in mind that any of the individual attacks may result in death if not recognized and treated.

Non-specific therapy includes the use of oxygen and morphine sulfate. The latter, in doses of 1 mg. per 4.5 kg. of body weight, has a pronounced effect on restlessness and irritability. Specifically, many drugs have been employed in an effort to terminate the paroxysm. Of these, digitalis is the most effective. The optimal digitalizing dose for children under two years of age is .06 mg. of digitoxin per kg. of body weight, administered in three divided doses within 16 to 24 hours. A daily maintenance dose of one-tenth the digitalizing dose for one week or more is recommended for prevention of recurrences. In the case herein reported, more than the optimal digitalizing dose was employed without effect.

Quinidine is effective for both therapy and prophylaxis of supraventricular tachycardia.[3] The condition will not recur if a level of 1 mg. of quinidine per liter of blood is maintained. Nadas and co-workers[4] said that quinidine is the drug of choice in the treatment of ventricular tachycardia. They recommended a dosage schedule of 100 mg. every three hours by mouth for five doses or until paroxysm stops. They used the drug only for older children. In the past, quinidine has been employed infrequently and then only with great caution. Its ineffectiveness in some cases undoubtedly is attributable in part to insufficient dosage.[1] It is unfortunate that the toxic effects of so valuable a drug have been overemphasized. Katz[3] stated that the only contraindication to the use of quinidine is idiosyncratic reaction to the drug. It may be given orally or intramuscularly in the same dosage. Intravenous administration is dangerous and rarely necessary. The dosage should be determined by clinical trial. In the case herein reported, as much as 200 mg. was administered in a single dose after lesser amounts had been found ineffective. The patient was maintained on the drug constantly for 12 months.

It is suggested that quinidine be administered in paroxysmal tachycardia in infancy whenever optimal doses of digitalis are ineffective. When quinidine is employed, the dosage should be increased to the point of therapeutic response provided no toxic effects result. This optimal dosage will vary with patients.

SUMMARY

1. A case of supraventricular paroxysmal tachycardia with 61 recurrences in a young infant is presented. Treatment with optimal doses of digitalis was ineffective and ultimately the patient was maintained without paroxysm for more than 12 months before the condition finally abated.

2. The treatment of this condition with emphasis on the use of quinidine is discussed.

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EDITORIAL

Prelude

Many officials of the California Medical Association were faced last month with the A.M.A. Annual Session following immediately on the heels of the C.M.A. meeting. In many instances, delegates to the A.M.A. and other physicians planning to attend the A.M.A. session in New York took off directly from the Los Angeles scene of the C.M.A. gathering.

In size and importance the state meeting is not expected to compete with the national session. However, in the light of membership and completeness of program, the California annual session need take a back seat to no one.

The Los Angeles meeting drew an attendance of more than 2,800 physicians, or about 25 per cent of the C.M.A. membership, and a total registration of over 4,000 persons. This is a new record.

Physicians attending the meeting had a selection of 157 scientific papers, covering all phases of medical and surgical care. They could visit 15 scientific and 98 technical exhibits, a display which brought from the C.M.A. Council a vote of confidence in the exhibit layout and appearance and in the exhibitors for their splendid cooperation.

In addition, the medical motion picture program, running continuously and precisely on time for hours on end, exhibited 100 films and drew large audiences at all times.

On the business side, the House of Delegates devoted two full days to the policy-making affairs of the Association. The House adopted By-Law amendments which will make Councilors-at-Large members of the House of Delegates and will provide machinery for eliminating the Interim Session in 1954 and later years if the prospective business of the meeting does not justify such a session.

Two additional By-Law amendments, one to write the Medical Services Commission into the By-Laws and the other to require United States citizenship as a prerequisite of C.M.A. membership, were rejected by the House as requiring further study.

Resolutions calling for expressions of policy were numerous and the bulk of them qualified as "emergencies" which demanded action at this session. Among those adopted by the House was one recognizing that while persons with certain technical skills can be of great aid in the practice of medicine, the possession of such skills does not per se permit them to practice medicine. Another sought to clarify the doctor draft law, another to permit smaller hospitals to be recognized for approval for internship training, and another to establish a national program of blood banking under the auspices of a top committee representing all interested parties.

Still other resolutions passed by the House of Delegates called for support of the A.M.A. committee proposal to recognize osteopathy as no longer in the cultist classification, for the treatment of non-service-connected disabilities of veterans under community resources, and for approval of the Bricker Resolution in the National Congress to limit the treaty-making powers of governmental departments or agencies.

Various of these resolutions called for introduction of similar matters before the A.M.A. House of Delegates, a procedure which was followed by the delegates to the A.M.A.

The Council, in its daily meetings during the session, voted approval of a statewide program of disability insurance for C.M.A. members, subject to further approval by the larger county medical societies. The Council also approved a budget, which was later approved by the House of Delegates, continuing annual dues for 1954 at $40 per active member.

In the annual elections, Dr. Arlo A. Morrison of Ventura was chosen as President-Elect. Dr. John W. Green of Vallejo was elevated to the presidency and

Drs. Donald Charnock and Wilbur Bailey, both of Los Angeles, were reelected Speaker and Vice-Speaker, respectively, of the House of Delegates.

For Councilors, the House chose Drs. Robert O. Pearman of San Luis Obispo, Sidney J. Shipman of San Francisco and Ralph Teall of Sacramento as representing their respective Councilor districts. For Councilors-at-Large, Dr. T. Eric Reynolds of Alameda County was elected to office and Dr. Arthur A. Kirchner of Los Angeles was reelected for a three-year term.

All incumbent delegates and alternates to the American Medical Association were reelected.

For trustees of California Physicians' Service, the House elected Drs. Leon Desimone and Merlin L. Newkirk of Los Angeles and Edwin L. Bruck of San Francisco as new members. Dr. Francis T. Hodges of San Francisco and Mr. Robert A. Hornby of the same city were reelected trustees.

The 1953 Annual Session departed from earlier precedent by scheduling the many activities over a period of five days. In past years a four-day session has been held but this year the longer meeting was indicated. This permitted a lapse of two days between the sessions of the House of Delegates, a hiatus which met with general approval. While the longer session posed some problems for some of the scientific sections, it is believed these difficulties can be eliminated in future meetings. Certainly, the more leisurely pace of the entire session drew most favorable comments, not only from physicians attending but from exhibitors and guests alike.

The Council has again selected Los Angeles as the place for the meeting next year. For 1955, San Francisco will be the host. The 1953 Interim Session, possibly the last of these winter meetings, will be held in San Francisco.

Thus the curtain rings down on another C.M.A. Annual Session. In many ways this meeting surpassed all earlier gatherings; in some ways it demonstrated instances in which planning may need revision. Taken as a whole, it appears to have been eminently successful from all points of view, a "postgraduate course" made easily available in a limited period of time.

The World's Greatest

THE WORLD'S greatest medical meeting was held in New York the first five days of June, when the American Medical Association staged its Annual Session before an audience of more than 20,000 physicians and another 20,000 technicians, nurses, medical students, exhibitors, guests and other collaborators.

Scientifically, the session provided more than 400 papers on all aspects of medical and surgical care, research, technique and therapy. On top of that, an entire floor of the Grand Central Palace was devoted to scientific exhibits, many of which were televised for immediate viewing and for delayed television programs. Physicians by the thousands spent countless hours in the scientific meeting rooms, the scientific exhibits and the daily television showings of medical and surgical clinics.

Other exhibits of a technical nature occupied three floors of the Grand Central Palace in the largest technical exhibit ever put together at a medical meeting. Time spent at these exhibits was voted eminently valuable by the many doctors present and even the most experienced specialists came away with new ideas on the treatment or technique of medical or surgical therapy.

The business of the meeting occupied three days for the members of the House of Delegates. Most important items coming out of the deliberations of the House concerned veterans' medical care, medical ethics and osteopathy.

At long last the House of Delegates came out boldly in recommending that the medical care provided by the government to military veterans be limited to service-connected disabilities except in cases of neuropsychiatric or tuberculous origin. All other cases, the House found, should be treated at the local community level under local auspices and in local facilities. The A.M.A. has been flirting with this policy for a number of years but has never before expressed it in such firm tones. Such a policy would be strictly in keeping with the policy of the current federal administration of recognizing states' rights and of reducing federal expenditures wherever possible.

As to medical ethics, the House received eleven resolutions dealing with ill-founded public statements emanating from one or another branch of medicine but reflecting on the integrity and ethics of the entire profession. Some of the conclusions of the reference committee on these resolutions are worthy of repetition here. The committee stated that it "believes the members of the House of Delegates have demonstrated their devotion over the years to the principles of American democracy. This devotion includes the right of free speech. With this the committee agrees unqualifiedly."

At the same time, the committee stated: "Broad generalizations, ill-advised and poorly-prepared statements that often fail to convey the intended meaning are unfortunate and are to be deplored. Destructive critical comments serve no useful purpose. Your committee has the utmost confidence that the great majority of our members are entirely

capable of avoiding these pitfalls without additional advice from this committee."

The report brought out the fact that the A.M.A. and its constituent societies provide adequate machinery for disciplining those few members who transgress ethical lines.

Greatest debate of the session was provided over the report of a special committee on the relationship between osteopathy and medicine. The report held, in brief, that the distinctions between the two today are of such nature that the present stigma of cultism is no longer applicable. On this basis, the report recommended that this stigma be removed where it might affect the services of Doctors of Medicine teaching in the undergraduate or postgraduate courses of osteopathic schools. The opening of the door to qualified teachers would then raise the educational standards of osteopaths and work toward a further elimination of scientific differences between the two groups.

After considerable deliberation the House of Delegates voted to approve the suggestion that the special committee be continued in its investigations but that no definite action be taken on its recommendations until the 1954 Annual Session. Thus the move toward rapprochement of medicine and osteopathy, started by the California Medical Association in 1941, was delayed another year, during which time the constituent medical societies will have a further chance to evaluate the research undertaken by the special A.M.A. committee.

Top offices in the A.M.A. were filled by elections in the House of Delegates. Dr. Walter B. Martin, long a member of the House of Delegates and more recently a member of the Board of Trustees, was chosen President-Elect, following Dr. Edward J. McCormick, who was elevated to the presidency. For Vice-President, Dr. Carl Gellenthien of Valmora, N. M., was elected. Other elections covered members of the Board of Trustees and several Councils of the A.M.A.

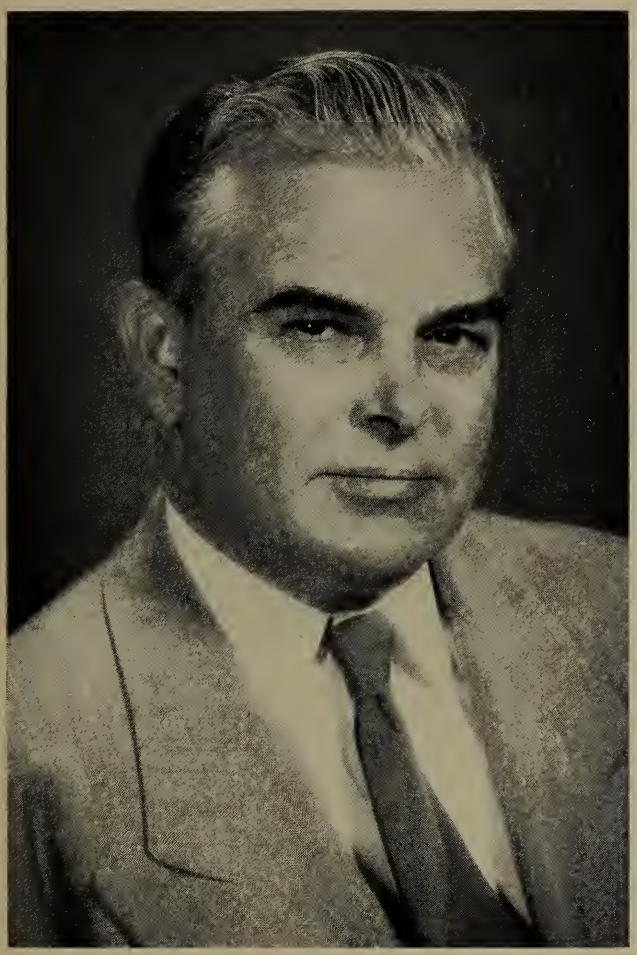
Full proceedings of the business sessions are appearing in the *Journal of the American Medical Association* and will merit reading.

In closing the world's greatest medical meeting, the size and importance of the gathering was confirmed by the decision of the Board of Trustees that only Atlantic City and San Francisco are now considered capable of handling the A.M.A. Annual Session. While Chicago and New York have shared with these cities in the past, their facilities are now found to be inadequate for further annual meetings. Thus it appears that California will be host to the A.M.A. every two or three years from now on. The 1954 session has already been scheduled for San Francisco, a gracious host in 1946 and 1950 and apparently slated for the same role often in future years.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

The New President-Elect



ARLO A. MORRISON, M.D.

ONE MAN'S AVOCATION redounded to the benefit of the entire California medical profession in May, 1953, when Arlo A. Morrison of Ventura was elected President-elect of the California Medical Association at the annual session in Los Angeles. When he was questioned as to what, apart from the practice of medicine, most consumed his time, energy and enthusiasm, the new President-elect unhesitatingly gave first place to the organizational aspects of the profession.

Dr. Morrison has never tired of this avocation since becoming secretary of the Ventura County Medical Society in 1934, his third year in practice there. Coincidentally he was named a delegate to the California Medical Association—and, with the exception of six years of naval duty, his service to his colleagues in private practice has moved through increasingly broader channels.

Dr. Morrison, born in Hickman, Nebraska, November 27, 1904, was graduated in medicine at the University of Nebraska in 1928. Internship followed at Bishop Clarkson Hospital, Omaha, and at the former City Hospital, Seattle. He began general practice in Buhl, Idaho, in 1929, but shortly undertook EENT postgraduate work in Los Angeles and then established himself in that field in Santa Paula, Ventura County, in 1932.

He remained there until January, 1941. That marked the beginning of his naval career which was to include 21 months, much of it under fire, as medical officer of an attack transport squadron —the navy early recognizing his organizational and

JOHN W. GREEN, M.D. President
ARLO A. MORRISON, M.D. President-Elect
DONALD A. CHARNOCK, M.D. Speaker
WILBUR BAILEY, M.D. Vice-Speaker
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DWIGHT L. WILBUR, M.D. Editor
JOHN HUNTON Executive Secretary
General Office, 450 Sutter Street, San Francisco 8
ED CLANCY Director of Public Relations
Southern California Office:
417 South Hill Street, Los Angeles 13 • Phone MAdison 8863

leadership abilities. Interspersed during his service were tours of duty as head of the EENT departments of both the Corona and Long Beach naval hospitals. He now holds a captain's commission in the U. S. Naval Reserve.

At the completion of his naval duties Dr. Morrison in 1946 began private practice anew, this time in Ventura. Within less than a year he was completely immersed in medical organizational work. In 1947 he was elected a councilor of the Public Health League—in the meantime having been returned to his job as secretary of the county society and delegate to the C.M.A. Then came election to the Council of the C.M.A. in 1951, followed in 1952 with a concurrent trusteeship of California Physicians' Service.

The avocational aspects become even more apparent when Dr. Morrison's additional services to the public and profession are noted. He has served on the board of directors of the Tri-Counties Blood Bank, the Ventura Chapter of the American Red Cross, and the advisory boards to the Crippled Children's Commission and the Mental Health Commission. He is a non-resident member of the Los Angeles Society of Ophthalmology and Otolaryngology and its Research Study Club. For the past three years he has been serving on the Ventura Elementary Board of Education. He resigned as president of that body upon his election to the C.M.A. presidency-elect, but continues as a board member.

Dr. Morrison is a member of the active staffs of Ventura hospitals and is a consultant to Camarillo State Hospital. Even in so busy a life as the record of service to medicine implies, the new President-elect finds time for associations in other fields. He is a member of the Rotary Club and of the American Legion.

In Dr. Morrison's record, members of the C.M.A. House of Delegates found the training, the capacity for work and the enthusiasm that make for good leadership.



PAST PRESIDENTS OF THE CALIFORNIA MEDICAL ASSOCIATION (with years of their presidency)

Left to right, seated—Lowell S. Goin, Los Angeles (1944); George G. Reinle, Oakland (1933); George H. Kress, Los Angeles (1916); Robert A. Peers, Palo Alto (1935). Standing—H. Gordon MacLean. Oakland (1951); Sam J. McClendon, San Diego (1946); Donald Cass, Los Angeles (1950); E. Vincent Askey, Los Angeles (1948); R. Stanley Kneeshaw, San Jose (1949); John W. Cline, San Francisco (1947). Other Past Presidents, not in photograph: Edward N. Ewer, Oakland (1925); Lyell C. Kinney, San Diego (1930); Junius B. Harris, Sacramento (1931); Harry H. Wilson, Los Angeles (1940); William R. Molony, Sr., Los Angeles (1942); Karl L. Schaupp, San Francisco (1943). The picture was taken at the 1953 Annual Session of the C.M.A. in Los Angeles.

Hodges Heads C.P.S. Board

Dr. Francis T. Hodges of San Francisco has been elected president of the Board of Trustees of California Physicians' Service by vote of members of the board. Other officers are: first vice-president, Dr. John M. Rumsey of San Diego; second vice-president, Dr. Frank A. MacDonald of Sacramento; secretary, Dr. Philip N. Baxter of Oakland; treasurer, Dr. Merlin L. Newkirk of Southgate; assistant secretary-treasurer, Dr. Leon O. Desimone of Los Angeles.

The election meeting of the Board of Trustees was held immediately following the annual meeting of the California Medical Association, May 24-28, in Los Angeles. At the C.M.A. meeting three new members of the Board of Trustees were elected by the House of Delegates of the C.M.A. They are: Dr. Edwin L. Bruck of San Francisco and Drs. Newkirk and Desimone.

The C.M.A. Council reappointed Dr. Neil J. Dau of Fresno, Dr. Ivan C. Heron of San Francisco and Dr. A. A. Morrison of Ventura to serve for a term of one year.

In Memoriam

Allen, Joseph R. Died in Los Angeles, May 1953, aged 78. Graduate of Northwestern University Medical School, Chicago, Ill., 1906. Licensed in California in 1923. Doctor Allen was a member of the Los Angeles County Medical Association, a life member of the California Medical Association, and an associate member of the American Medical Association.

✤

Bartlett, Alexander G. Died in San Francisco, May 28, 1953, aged 58, of carcinoma of the colon. Graduate of the University of California Medical School, Berkeley-San Francisco, 1926. Licensed in California in 1926. Doctor Bartlett was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✤

Caster, John L. Died in Balboa, April 2, 1953, aged 37, of coronary artery disease. Graduate of the University of Southern California School of Medicine, Los Angeles, 1944. Doctor Caster was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Clecak, Nicholas J. Died in Oakland, May 19, 1953, aged 61, of bronchogenic carcinoma. Graduate of Rush Medical College, Chicago, Ill., 1918. Licensed in California in 1920. Doctor Clecak was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✤

Coate, Charles R. Died in Whittier, May 28, 1953, aged 75. Graduate of the Medical College of Ohio, Cincinnati, 1907. Licensed in California in 1924. Doctor Coate was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Dixon, Chester D. Died April 11, 1953, aged 52. Graduate of the University of Nebraska College of Medicine, Omaha, 1926. Licensed in California in 1927. Doctor Dixon was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Eames, Earl. Died in San Anselmo, May 1, 1953, aged 62, of coronary artery disease. Graduate of Rush Medical College, Chicago, Ill., 1917. Licensed in California in 1917. Doctor Eames was a member of the Butte-Glenn Medical Society, the California Medical Association, and the American Medical Association.

✤

Ginsburg, Samuel S. Died in San Francisco, May 8, 1953, aged 73. Graduate of the College of Physicians and Surgeons, Los Angeles, 1913. Licensed in California in 1913. Doctor Ginsburg was a member of the Tulare County Medical Society, the California Medical Association, and the American Medical Association.

✤

Hannah, Ward. Died in Long Beach, March 22, 1953, aged 75. Graduate of Northwestern University Medical School, Chicago, Illinois, 1911. Licensed in California in 1919. Doctor Hannah was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

Hawkins, George G. Died in Fresno, April 16, 1953, aged 72. Graduate of the Washington University School of Medicine, St. Louis, Missouri, 1905. Licensed in California in 1906. Doctor Hawkins was a member of the Madera County Medical Society, the California Medical Association, and the American Medical Association.

✤

Howitt, Henry O. Died in Everett, Wash., June 8, 1953, aged 91. Graduate of the Cooper Medical College, San Francisco, 1887. Licensed in California in 1888. Doctor Howitt was a retired member of the Marin County Medical Society, the California Medical Association, and an associate member of the American Medical Association.

✤

Jacobson, Harry P. Died March 23, 1953, aged 65. Graduate of the College of Physicians and Surgeons, Los Angeles, 1916. Licensed in California in 1916. Doctor Jacobson was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

KREUTZMANN, HENRY A. R. Died in San Francisco, April 28, 1953, aged 63, of myocardial infarction. Graduate of the University of Pennsylvania School of Medicine, Philadelphia, 1916. Licensed in California in 1916. Doctor Kreutzmann was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

MARTIN, ROSS C. Died in San Bernardino, April 20, 1953, aged 64, of nephritis. Graduate of the University of Louisville School of Medicine, Kentucky, 1912. Licensed in California in 1927. Doctor Martin was a retired member of the San Bernardino County Medical Society, the California Medical Association, and an associate member of the American Medical Association.

✣

MCKEE, CHARLES B. Died in Sacramento, May 29, 1953, aged 68, of cardiac failure. Graduate of George Washington University School of Medicine, Washington, D. C., 1907. Licensed in California in 1907. Doctor McKee was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

✣

MCLARAND, KENNETH C. Died in Santa Monica, April 15, 1953, aged 47. Graduate of the State University of Iowa College of Medicine, Iowa City, 1936. Licensed in California in 1940. Doctor McLarand was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

MONTGOMERY, ROBERT R. Died in Long Beach, May 2, 1953, aged 68. Graduate of the University of Toronto Faculty of Medicine, Ontario, 1910. Licensed in California in 1921. Doctor Montgomery was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

MOORE, GERTRUDE H. Died in Oakland, May 3, 1953, aged 69, of subacute bacterial endocarditis. Graduate of the Oakland College of Medicine and Surgery, 1907. Licensed in California in 1907. Doctor Moore was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

NEWMAN, LESTER. Died in San Francisco, April 25, 1953, aged 70. Graduate of the University of California Medical School, Berkeley-San Francisco, 1908. Licensed in California in 1908. Doctor Newman was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

NICHOLS, ROBERT C. Died in Ontario, March 29, 1953, aged 73, of coronary artery disease. Graduate of Northwestern University Medical School, Chicago, Illinois, 1911. Licensed in California in 1912. Doctor Nichols was a member of the San Bernardino County Medical Society, the California Medical Association, and the American Medical Association.

✣

PISCHEL, KASPAR. Died in Ross, April 9, 1953, aged 91, of acute pulmonary edema. Graduate of Leopold Franzens-Universitat Medizinische Fakultat, Innsbruck, Austria, 1886. Licensed in California in 1890. Doctor Pischel was a retired member of the San Francisco Medical Society, the California Medical Association, and an associate member of the American Medical Association.

✣

PRICHARD, MARVIN C. Died in Long Beach, May 5, 1953, aged 42, of myocardial infarction. Graduate of the University of Louisville School of Medicine, Kentucky, 1933. Licensed in California in 1949. Doctor Prichard was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✣

SILVERBERG, MORRIS H. Died in San Francisco, April 17, 1953, aged 56, of coronary artery disease. Graduate of the University of California Medical School, Berkeley-San Francisco, 1921. Licensed in California in 1921. Doctor Silverberg was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✣

TARPINIAN, HAROUTUNE A. Died in Fresno, April 28, 1953, aged 62, of cerebral hemorrhage. Graduate of the American School of Medicine of the Syrian Protestant College, Beirut, Syria, 1914. Licensed in California in 1924. Doctor Tarpinian was a member of the Fresno County Medical Society, the California Medical Association, and the American Medical Association.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. Judith Ahlem of Livermore was installed as president of the American Medical Women's Association at the meeting of that organization in New York last month.

LOS ANGELES

At the May 1953 election of the **Los Angeles Radiological Society,** the following officers were elected to serve for the twelve months from September 1953 through August 1954: President, Dr. Joseph F. Linsman, Beverly Hills; vice-president, Dr. M. M. Haskell, Long Beach; secretary, Dr. George Jacobson, Los Angeles; treasurer, Dr. Hubert J. Prichard, Long Beach; executive committee, Dr. Harold P. Tompkins, Los Angeles, and Dr. John Hamilton, Glendale.

* * *

Dr. Richard Thomas Barton, instructor in surgery at the University of Southern California School of Medicine, addressed the Fifth International Congress of Otolaryngology June 12 in Amsterdam, Holland, on the subject, "Neoplasms Involving the Carotid Artery."

* * *

Correction: In a news item in this section of the May issue of CALIFORNIA MEDICINE, **Dr. Clinton H. Thienes** was incorrectly identified as "director of Huntington Memorial Hospital." Dr. Thienes is director of the Institute of Medical Research of that hospital.

SAN FRANCISCO

Dr. Ernest H. Falconer, who retired from the faculty of University of California School of Medicine, San Francisco, in 1950, recently was awarded an honorary Doctor of Laws degree from McGill University, Montreal.

Dr. Falconer was graduated from McGill's Medical School in 1911.

* * *

The **gold headed cane** awarded each year to the member of the graduating class of the University of California School of Medicine who is chosen as "most outstanding" by fellow students and faculty, was presented this year to **Robert Eric Greenberg** of Berkeley. John H. Powers and Desmond S. Surfleet, both of San Francisco, were runners-up for the honor. The ceremonial presentation was made by Dr. William J. Kerr, emeritus professor of medicine.

SANTA CLARA

Mrs. Raymond T. Wayland, a past president of the Woman's Auxiliary to the California Medical Association, was elected a director of the Woman's Auxiliary to the American Medical Association at the organization's annual meeting held in New York City in June.

SANTA CRUZ

Recently organized with 21 members, the **Santa Cruz County Academy of General Practice** has applied for a charter as a component of the California Academy of General Practice. Officers of the new unit, the twentieth formed in the state, are Dr. A. H. Nittler of Santa Cruz, president; Dr. Ashby Steele of Felton, secretary.

Issuance of a charter to the Santa Cruz chapter will bring the membership of the California Academy to almost 1,700.

GENERAL

Officers of the **California Heart Association,** elected at the recent annual meeting of the organization in Los Angeles, are: President, Dr. George C. Griffith of Los Angeles; vice-president, Dr. Arthur R. Twiss of Oakland; secretary, Dr. Frederick Kellogg of Long Beach.

* * *

Exchange of information and discussion of mutual problems featured the first annual meeting of county medical society-sponsored **Bureaus of Medical Economics,** which was held in Los Angeles, May 23-24, concurrent with the California Medical Association annual session.

The meeting was attended by Mr. C. A. Catassi, Alameda County; Mr. Joseph Donovan, Santa Clara County; Mr. John A. Carnes, San Diego; Mr. Boyd Thompson, San Joaquin; Mr. Fred Gatchell, Santa Ana; and Mr. Walter F. Dickey, San Francisco. Subjects discussed were: Physician participation in the Bureau, the necessity for high calibre, well trained personnel, and collection procedures.

It was the consensus that this first meeting was beneficial to all, that it should become a yearly event, and that it should be held in conjunction with the C.M.A. annual session so that medical society executive secretaries and physicians can attend.

* * *

The second **International Congress of Cardiology** will be held in Washington, D. C., September 12 to 15, 1954. It will be immediately followed by the annual scientific sessions of the American Heart Association, September 16 to 18, 1954. A series of post-congressional visits and conferences to at least 20 of the leading cardiac clinics in different parts of the U. S. and Canada has been arranged by special committees of local Heart Associations in the various cities.

* * *

The eighteenth annual congress of the United States and Canadian sections of the **International College of Surgeons** will be held at the Waldorf-Astoria in New York, September 13 to 17.

* * *

The fourth congress of the **Pan American Medical Women's Alliance** will be held September 24 through October 1, 1953. Dr. Ina A. Marsh, 140 Linwood Avenue, Buffalo 9, New York, is registration chairman.

* * *

More than 11,000 surgeons, other physicians and guests are expected to attend the 39th annual clinical congress of the **American College of Surgeons,** the nation's largest scientific meeting primarily concerned with surgery, to be held in Chicago, October 5 through 9, 1953, according to a communication from the college.

The program will include formal scientific papers, panel discussions, symposia, postgraduate courses, surgical forums, medical motion pictures, ciné clinics, color television and exhibits.

Dr. Harold L. Foss, president of the American College of Surgeons for 1953, will preside at the opening evening session at which Dr. Fred W. Rankin, Lexington, Kentucky, will be installed as president for the year 1954. Sir James Paterson Ross of London will give the eighth Martin Memorial Lecture, entitled "Science and Surgery."

The tenth annual meeting of the **American Institute of Dental Medicine** will be held at Palm Springs, October 25 through October 29, 1953. Advance registration, according to an official announcement of the meeting, indicates that between 300 and 400 dentists and dental and medical researchers will attend. Among guest speakers will be Warren L. Bostick, M.D., department of pathology, University of California School of Medicine, San Francisco. His subjects: Dynamics of Inflammation; Cellular Reaction to Injury; The Malignant Lymphoma.

Applications may be secured by writing Miss Marion G. Lewis, executive secretary, 2240 Channing Way, Berkeley 4.

POSTGRADUATE EDUCATION NOTICES

MEDICAL EXTENSION UNIVERSITY OF CALIFORNIA

Postgraduate Courses for 1953

Obstetrical and Gynecological Conference, September 2, 3, 4. Place and fee to be announced.

Ophthalmology (for specialists), September 7 through 12. Fee $75.00. Medical Center.

Medicine for General Practitioners, September through November. East Oakland Hospital. Fee $50.00.

Evening Lectures in Medicine, September through November. Fee $50.00. Mills Memorial Hospital, San Mateo (probably).

Occupational Health, October 14, 21, 28 and November 4. Fee to be announced. Medical Center.

Contact: All inquiries to be addressed to Stacy R. Mettier, M.D., Professor of Medicine, Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

1. What's New in Therapeutics—Wednesday, August 12.
2. Office Gynecology—Wednesday, August 19.
3. Peripheral Vascular Diseases—Wednesday, August 26.

All of these one-day symposia will be given at the U. S. Naval Hospital in San Diego, and they are being given in cooperation with the San Diego County Medical Society.

Contact: Dr. Thomas Sternberg, Office of Medical Extension, University Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Cardiology and Vascular Disease—No. 832

Date: September 14, 1953—full time, one year.

Fee: $1,000.00.

History, physiology, pathology, diagnosis, treatment of cardiac and peripheral disease. Emphasis placed on bedside teaching, electrocardiography, fluoroscopy, and associated diagnosis aids. Designed to meet the requirements for certification by the American Board of Cardiology. Six hours of didactic lectures per week; 35 hours of laboratory work. 32 units credit for master's degree. Course Director: George C. Griffith, M.D.

Gastroenterology—No. 844

Date: September 21, 1953—Full time, one year.

Fee: $1,000.00.

Course is designed to give a limited number of qualified physicians advanced training in this field. The didactic courses will include intensive study of the physiology, pathology, as well as the clinical aspects of the diseases of the digestive tract. Clinical teaching will be done in the outpatient department of the Los Angeles County Hospital. 32 units credit for master's degree. Course Director: George K. Wharton, M.D.

Intensive Review of Internal Medicine—No. 855

Date: September 21, 1953. Applications accepted until August 1, 1953.

Fee: $50.00.

A two-week course offered for students preparing to take the examination for the American Board of Internal Medicine. Course consists of 40 hours of didactic lectures, 8:30 a.m. to 12:30 p.m., Monday through Friday. It will cover the fields of Endocrinology, Cardiology, Gastroenterology, Hematology, Arthritis, Neurology, and Isotopes. Course Director: Donald Petit, M.D.

Diagnostic and Therapeutic Radiology—No. 858

Date: Course begins by arrangement.

Fee: 3 mos.—$250.00 6 mos.—$ 500.00
9 mos.—$750.00 12 mos.—$1,000.00

This course is designed for a limited number of qualified physicians who wish to prepare for the American Board of Radiology, and who wish specialized training in a particular field of medicine such as orthopedics, cardiology, etc. Course will be conducted in the Department of Radiology at the Los Angeles County Hospital. Course Directors: Ray A. Carter, M.D., George Jacobson, M.D.

Anesthesia

Date: Course begins by arrangement.

Fee: $300.00 (full time, three months).

Basic principles and techniques involved in administering the various anesthetic agents, including oxygen therapy and operating room care of patients. Open to a limited number of qualified physicians and dentists. Emphasis placed on practical administration of anesthetic agents. Presented at the Los Angeles County Hospital. Course Director: J. S. Denson, M.D.

Contact: Gordon E. Goodhart, M.D., University of Southern California School of Medicine, Division of Medical Extension Education, 1200 North State Street, Box 158, Los Angeles 33, California.

COLLEGE OF MEDICAL EVANGELISTS

Diseases and Injuries of Bones and Joints—Date: July 6-31. Fee to be announced.

Full-Time Basic Science Course in Surgery and Surgical Specialties—Date: October 5, 1953 through June 11, 1954. Fee to be announced.

Contact: H. M. Walton, M.D., Chairman, Postgraduate Division, 312 North Boyle Avenue, Los Angeles 33.

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology.

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.

INFORMATION

Something for Nothing?

GEORGE U. WOOD, *Oakland*

THE "APPOINTED DAY" for the starting of the National Health Service in England was July 5, 1948. The Minister of Health, Mr. Aneurin Bevan, was responsible to Parliament for seeing that health services of all kinds are available to all who need them. Two plebiscites were called by the British Medical Association before the act was passed. The result of the first showed 90 per cent of the physicians against the proposed act. A few months later a second vote was taken after certain amendments were made, and the medical profession was split 50-50.

One of the reasons it passed so easily was that the people were conditioned for legislation of this type after the many controls and hardships during the war. Sir Allen Daley, head of the London County Council, said the National Health Service was inevitable, because both parties promised it in some form; but had organized medicine presented a united front many of the abuses could have been avoided—and the results different.

Shortly after the act was passed the British Medical Association asked for a meeting with Mr. Bevan in an endeavor to work out the details. Mr. Bevan agreed, and after keeping representatives of the association waiting more than an hour finally appeared and at once subjected the physicians to forty minutes of abuse and insults, stating "I'm not here to waste my time listening to what you doctors want; I'm here to tell you how you're going to practice under the act and what you are going to get."

Medicine was an adjunct of the socialist government of Great Britain for four years. What has that experiment to show us? How has the theoretical blueprint worked out in practice? Are conditions in the United States so closely parallel to those in Great Britain in 1947 that the same radical changes are needed here and now as were adopted then and there? Shall we rush to follow our neighbor's example? Or would it not be better to examine the factual details of this momentous program—and perhaps learn something from our neighbor's mistakes?

The author is executive vice-president of Peralta Hospital, Oakland.

Originally completed in 1951 and recently brought up to date, this article was written by an expert in hospital administration. It states the pitfalls and fallacies of the National Health Service in England so well that it is published for the information of our readers.

With these questions in mind I visited England in 1950. I was not concerned with political theory as such. I wanted to know what direct effects socialist theory, applied to medicine, had had on the medical profession, particularly on hospitals, but even more on that larger and equally interested group which the medical profession serves, the actual and potential patients—in short, the public. I interviewed individuals at all social, economic and vocational levels: workers, foremen, and managers in factories; bank clerks, hospital personnel, attorneys, social welfare workers; general physicians and Harley Street specialists; the head of the dental association, the supervisors of medical schools, officials in the Ministry of Health.

The gigantic program of "political medicine," I found, appeals to one of the most common urges of human nature—the desire to get something for nothing. But that is an appeal that is never really answered; there is always a catch in it. When you try to get something for nothing, you always lose something in the scramble.

The first loss to Great Britain is the virtual liquidation of the general practitioner— of the fine old tradition of the "family doctor" who knows you as a person, not a statistic or a chart record, whom you trust to "see you through."

In Great Britain, the office of the general practitioner has been reduced to a mere clearing house and place for the care of trivial ailments in metropolitan areas. Under the National Health Service he cannot operate or administer treatment in many of the state-controlled hospitals. Some hospitals refuse to allow him inside the door. Others will admit him only when trailing in the wake of a consultant or specialist; for every person requiring hospitalization is referred to a staff member who must be a specialist.

Many patients do require the treatment of a specialist. At the other extreme, a far larger number need only a word of advice and directions for home treatment. As one Middlesex doctor put it: "For every cut, burn, blister, bruise, boil, sore or small abscess, or other trivial injury that becomes serious, there are thousands that respond to home treatment with the help of nature. Crowded waiting rooms and surgeries such as I never had before July 8, 1948, even during epidemics," he continued, "are filled with women and children almost exclusively, and their complaints are for the most part picayune. During the past week I have been consulted by a daily average of 49 women, 23 children, and 8 men. In a large industrial practice usually with approximately equal numbers of both sexes on my list, those figures speak for themselves."

In other words, the chance to get something for nothing by universal "free" medical service brings

on a stampede, even when the service is not necessary. The effect on the quality of that service is obvious. Doctors are overwhelmed almost to distraction, and hospitals are overcrowded beyond all hope of efficiency. The really sick patient cannot be adequately cared for.

The doctors let themselves in for this state of affairs largely because they did not fully foresee what they were getting into, and those who did lacked the organization necessary to present and give effective power to their knowledge.

Now the British Medical Association reports that 75 per cent of the general practitioners—the backbone of the medical profession — wish the clock could be turned back. The 25 per cent in favor of the new system are young men just starting out in practice. There are 8,000 doctors in the Medical Practitioners Union—a frankly Socialist organization. Many general practitioners (not Socialist) like the National Health Service system—probably the poorer ones who want an easy life with a fixed salary, social security benefits, tenure of service, and a pension at age 65. For this they are willing to forego the longer, more exacting road with its challenge to individual effort.

According to an eminent practicing surgeon, "The general practitioner is no longer interested in doing his fair share of the work. Oddly, medical men figure largely on Group Management and Regional Management committees. These medical men with political aspirations and/or leanings are about the worst feature of the National Health Service. If you want to see medical men mishandled, put their own kind in the box seat!"

The specialists on full time basis in hospitals—for example, radiologists, pathologists and anesthesiologists—do not fare so badly. They begin at a stipend of $5,100 a year with an annual increase of $350 up to $7,700—and this income, the doctors told me, goes twice as far in Great Britain as it would in the United States. They are also eligible for annual merit awards as a non-financial incentive.

At the opposite extreme, the young doctor, just admitted to practice, may welcome the security of an assured income. However, the program was not designed for the benefit of members of the medical profession—who like it less the more they see of it—but supposedly for the general public.

The worst feature of the unnatural union of medicine and politics is the involvement of both patient and doctor in Gordian knots of red tape. The doctor is subordinated to the bureaucrat, and the art and science of medicine is reduced to an instrument of politics. Such an arrangement is not only bound to be cumbersome and inefficient, and, through the delays of all political routine, even dangerous—it also opens wide the doors to petty racketeering and tax dodging by the unscrupulous. Such charges have recently been made against dentists.

Many dentists today find that it is better to take National Health Service patients than private patients. Small profits, quick returns! Since the imposition of a charge to the patient of one pound per denture and a shilling on a bottle of medicine, there has been a vast decrease in the amount of dentistry and medication.

But even without this juggling with a system which lays itself wide open to finagling, the patient ultimately pays the price of the red tape in which both he and the doctor are entangled when medical care is made just another cog in the political machine.

One out of every 100 Britons—400,000 in all—is employed in the Ministry of Health. They may know nothing about medicine or hospital administration, but they are well trained as bureaucrats. thoroughly familiar with forms and "channels" and copies in quintuplet. The knots and tangles in which they enmesh the simplest performance are at once maddening to the doctor and dangerous to the patient.

For example, in one hospital that I visited, the cook had become ill and the superintendent had applied for a replacement. That was on January 10. First he must notify the Ministry, giving full information. Ten days later he telephoned the Ministry to ask if a cook had been found. No cook and no information. More telephoning and writing on January 23. No information. On January 25, the Ministry suggested that the superintendent advertise in the local paper—which he might better have done in the beginning. But first, the advertisement must be submitted to the Ministry for approval, and if and when it was finally run it must be labelled, "Cautionary," which means that no worker between the ages of 18 and 45 may apply for the job without the consent of the Ministry of Labor. The Ministry of Labor controls the destiny of all workers between the ages of 18 and 45. A worker may quit his job but cannot accept another without the permission of the Ministry. When I was there on January 31, there was still no cook.

If a surgeon or hospital is in urgent need of an instrument, it is not just bought so that it will be on hand for immediate use. First a detailed description of the instrument is submitted and a statement made as to whether it is to be additional equipment or is to replace another instrument. The request is passed along to a standing sub-committee, which relays it to the Medical Committee, which refers it to the Finance Committee, which sends it to the General Purpose Committee, which forwards it to the Economic Committee, which may or may not grant the request.

Even if this final report is favorable, the hospital has waited for its equipment, or the patient for his operation, for months before the order has gone its tortuous way.

On the day I visited a certain hospital, the administrator apologized for its dreary and run-down appearance—a matter of great importance to the morale of the patient, as every administrator knows. The administrator was trying to get some redecorating done, but since the law requires the approval of the Ministry for any repairs costing more than $100, he had been waiting for months for permission to repaint the hospital corridors—for the first time, incidentally, since before the war.

It is small wonder that, to American eyes, the hospital administrators of Great Britain seem inefficient and lacking in initiative. They are so trammeled in red tape, and so beset with government committees standing over them telling them how to run their hospitals—a business to which they have brought years of training and experience—that they are inclined to throw up their hands and say, "Oh, what's the use?"

The hospitals of England are badly overcrowded and understaffed. Fifty thousand hospital beds, at the time of my visit, were closed because of a shortage of trained personnel.* This is hardly surprising, since under wage fixing the maids are paid more than fourth year registered nurses. The pecuniary incentive to enter the nursing profession is small when a fourth year state registered nurse receives $674 a year, of which $281 is deducted for board, lodging, and uniforms, leaving a take-home pay of $393 a year, or approximately $33 a month.

Just as the Harley Street specialists are not affected by the National Health Service and are as busy as ever with patients who are willing to pay a private fee for expert advice, so the hospital patient can have a bed in a private ward by paying for it plus an additional 25 per cent for better food and nursing.

From this anomalous situation it is apparent that medical care under Socialism is inefficient, and that better medical care simply plays leap-frog over Socialism. You may get something for nothing, but you still get what you pay for. This, perhaps, is a notable example of the British procedure known as "muddling through." From my observation, "muddling" is indeed the word for it!

On the appointed day, July 5, 1948, the preponderance of voluntary and municipal hospitals together with their premises, equipment, furniture and other movable property were transferred to and vested in the Minister. The institutions taken over include maternity homes, tuberculosis sanatoria, infectious disease hospitals, provision for the chronic sick, mental hospitals and mental deficiency institutions, accommodations for convalescent treatment, rehabilitation, and all forms of specialized treatment.

The Minister at the same time also took over all the liabilities of these hospitals, institutions and services. In other words, he took them over as "going concerns." All the property taken over by the Minister is vested in him free of any *preexisting trust*—that is, it is at the free disposal of the Health Service.

Under the act, all endowments held by the voluntary hospitals, other than teaching hospitals, were taken over by the Minister and pooled in a Hospital Endowment Fund. The Minister is empowered to use the capital of this fund first to meet the existing debts and liabilities attaching to the voluntary hospitals, and to apportion the income received from the balance of capital among the Regional Hospital boards and Hospital Management committees.

The high-handed procedure by which hospitals for the care of the sick were taken out of the hands of trained professionals and made a cog in the political machine was nothing so blatant as straight confiscation. Operation under the National Health Service is strictly voluntary. One is irresistibly reminded of the situation in Russia, where persons conform "voluntarily"—or else.

In Great Britain, 2,000 hospitals—about 90 per cent—thus "voluntarily" allowed themselves to be taken over by the politicians and nationalized. But 244 declined to subject themselves to political medicine. Little is heard of these "disclaimed hospitals," as they are called. I was particularly interested to see how they fared and especially whether they were in any way penalized for their recalcitrance.

The "disclaimed hospitals" which declined to give up their standing and principles "voluntarily" are indeed the stepchildren of the hospital system in Great Britain. They are divided into three classes: trade union hospitals, supported by union dues; hospitals operated by religious and fraternal orders, supported by contributions and endowments; and nursing homes, which correspond to independently operated non-profit hospitals in this country. These receive no financial assistance from the socialist government. But the government has its eye on them nonetheless. With the hope of bringing them "voluntarily" into the fold, it puts every possible obstacle in the way of their successful operation. In expansion, purchase of supplies, remodeling, improvements and the promptness with which requirements are met, the "disclaimed hospitals" are discriminated against and preference given to the politically-operated, state-controlled hospitals.

*Recent information reveals that between 30,000 and 40,000 hospital beds are closed. Many of these beds are dispersed war-time beds remote from centers of population. They present great staffing difficulties in peacetime, even without a nursing shortage.

The result is an inevitable lowering of standards. The price of freedom comes high. Nevertheless, despite these severe handicaps, the independent or disclaimed hospitals are not boycotted by patients. One that I visited may be taken as an example. It has 140 beds and a personnel of 450. Although the rates are high—the average room charge is $147 a week—it is operating to capacity and has a waiting list. This hospital is supported by specialists and in it are done considerable outpatient, laboratory and x-ray work. It is hard to escape the conclusion that the value of voluntary non-profit hospitals like those in the United States is recognized even in Socialist Great Britain.

From my own informal but extensive poll of public opinion, I think there is no doubt that the people of Great Britain will not vote the system out—they have been well indoctrinated with the "something for nothing" principle. The doctors were caught napping and are now stuck with it. It is generally conceded by the medical profession that independent practice of medicine in Great Britain is doomed to extinction within the next ten years.

Has the success of political medicine in Great Britain been so striking, and is the situation in the United States in 1953 so similar to that of Great Britain in 1947, that we should rush pell mell to vote the same system into effect here?

The success of the experiment, I found from personal investigation, is, to put it mildly, far from unqualified. And the situation which brought it about is far from parallel to our own. The National Health Service Act was a policy of desperation, born of the abnormal conditions of war and the state of bankruptcy into which voluntary non-profit hospitals had fallen. Neither of these conditions applies to America today.

Moreover, the American public has been bred to different standards in the treatment of illness than those prevailing, by long custom, in England. In Britain, 70 per cent of all babies are born at home, without hospital facilities; 90 per cent are delivered by midwives with no doctor in attendance.

During the four years of political medicine, it is true that infant and maternal mortality rates in England have shown improvement. But to ascribe this improvement to political control of medicine is to fall victim to the ancient fallacy of *post hoc, ergo propter hoc*. The mere fact that two things happen concurrently is not adequate reason to believe that one is the effect of the other.

The improvement, as a matter of fact, has not been proportionally as great as in the United States, where freedom in the practice of medicine still flourishes. The credit taken by the Socialist government ignores the medical fact that newer treatments and drugs have lowered the infant and maternal death rate all over the world, regardless of politics.

In America, one of the greatest advances in hospital procedure has been the discovery that the sooner most patients are back on their feet, the quicker and more complete their restoration to normal health. The average length of hospitalization for an American patient is six or seven days. In 2,400 hospitals of England and Wales, I found, the average stay is 20 days.

These differences between the situation here and that which obtained in another country must be taken into account lest we somehow find ourselves the owners of an odious solution for problems we do not have. Ours is not a problem of finding something —almost anything—to make a broken-down mechanism function somehow. We do need to improve a mechanism which is already functioning well, although not perfectly. What we want is not something passable to replace something bad, but something better to replace something good. We need to develop a nation-wide, comprehensive, coordinated system of health insurance at a cost the public can afford. We need to do this without making physicians and surgeons and men and women qualified and trained to medical and hospital service a cat's paw of politics.

American doctors have not been caught napping. They are organized for action—not as just another pressure group motivated by self-interest, but as those best qualified to examine the problem in all its complexity and inform and advise the public in the promotion of a program neither hasty nor makeshift nor doctrinaire, but wise and considered and constructive, to bring better medical care to more people.

Everywhere I went in England I heard from every side the statement: "You are merely ten years behind us; you will come to the same thing eventually." Will we? That depends on whether political medicine is an irresistible trend or the result of specific conditions local to time and place.

From England I returned with this strong conviction: If we are to preserve the free enterprise system which has made America the greatest nation in the world, medicine's special task in the struggle to do so is a concerted effort to broaden the scope of good medical and hospital insurance plans.

The private practice of medicine and the voluntary hospital system are living expressions of the free enterprise system. If they fail to grow and hold the confidence of the people, the clammy hand of Statism, Socialism and Communism will crush to earth the finest medical and hospital system in the world.

450 Thirtieth Street.

Study of Relations Between Osteopathy and Medicine

Report to the House of Delegates of the American Medical Association of a Committee for the Study of Relations Between Osteopathy and Medicine,* June 1953.

THE COMMITTEE. In 1951, the President of the Association reported to the Board of Trustees that the relations between medicine and osteopathy presented widespread problems involving a majority of the states to some degree. He had believed previously that these problems were localized to certain areas but found in the course of visiting many states that this was not the case.

The Board of Trustees appointed a committee to inquire into the matter and confer with representatives of the osteopathic profession. A number of informal meetings and one formal meeting were held. The latter was attended by the ranking officers of the American Osteopathic Association.

In his exaugural remarks to the House of Delegates in June 1952, the retiring President called this situation to the attention of the House of Delegates. The representatives of the American Osteopathic Association had informed the committee of the American Medical Association that the curricula of the colleges of osteopathy consisted mainly of courses in medicine and surgery and that the quality of instruction in these colleges could be improved if more doctors of medicine were willing to teach in these colleges. The President further raised the question as to the validity of the classification of modern osteopathy as "cultist" healing.

The reference committee considering this report recommended and the House directed that a committee be appointed by the Board of Trustees to confer further with representatives of the osteopathic profession when and if requested. The Board appointed a committee consisting of Drs. E. Vincent Askey, F. J. L. Blasingame, Edwin S. Hamilton, Arch Walls and John W. Cline.

Due to additional matters coming before the Board of Trustees at the Clinical Session in December 1952. the Board appointed another Committee for the Study of the Relations Between Osteopathy and Medicine. This committee, composed of the same persons, was directed to investigate these relationships and report to the House in June 1953.

The committee has gathered and reviewed considerable data derived from a variety of sources including questionnaires sent to every state medical association and county medical society and to those individuals who receive the Secretary's Letter.

The questionnaires were designed by the committee but were submitted to the secretary and assistant secretary of the Association, the director of public relations, the secretary of the Council on Medical Service, the director of the Bureau of Medical Economic Research and the attorney of the Association for review, criticism of the content and phraseology and additions and deletions. Others also were consulted. These conferences resulted in numerous changes in the original draft. The final questionnaires were, therefore, the product of many minds. An effort was made to phrase the questions simply but to make them adequate to provide the necessary information. A conscious effort was made to avoid "weighted" questions and terminology.

The questionnaires were returned to and analyzed by the Bureau of Medical Economic Research. The associations of 36 states and that of the District of Columbia responded in time to be included in this study. Twelve did not reply.

The questionnaires directed to county societies and individuals were less extensive but covered much the same material. The return was not as large as had been expected but the pattern of replies followed that of the state associations fairly closely although individual opinions were often at variance. The similarity of replies was sufficient to warrant the conclusion that the replies of the state associations represented majority opinion within the states.

The following state medical associations replied:

Alabama, Arizona, Arkansas, California, Colorado, Connecticut, Georgia, Illinois, Iowa, Kansas, Louisiana, Maine, Maryland, Massachusetts, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, New Mexico, New York, North Carolina, Ohio, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming, and the District of Columbia.

In addition, a letter propounding certain questions was sent to the deans of the schools of osteopathy. One responded directly. A composite reply was furnished to the committee by the Conference Committee of the American Osteopathic Association at a meeting of the two groups in Chicago, May 15, 1953. The replies were placed in writing subsequently and forwarded to the chairman.

The committee renders this report:

Historical. Osteopathy was founded in 1874 by Dr. Andrew Taylor Still, a practicing physician. He promulgated a concept that all "disease is the result of anatomical abnormalities followed by physiological discord," and that the "anatomical abnormalities" consisted of lesions of bones, joints and their supporting structures. These, in turn, induced disturbances of nerve and vessel function which produced pathological conditions in other tissues. He inveighed against drugs, serums, vaccination

*Drs. E. Vincent Askey, John W. Cline, Edwin S. Hamilton, Arch Walls and F. J. L. Blasingame.

and "electricity, x-radiance, hydrotherapy or other adjuncts." He believed that "Osteopathy is an independent system and can be applied to all conditions of disease . . ." and that surgery should be advocated only "as a last resort." He said, "We believe that our therapeutic house is just large enough for osteopathy and that when other methods are brought in just that much of osteopathy must move out."

The original concept of Dr. Still could be classified only as "cultist" healing. The only justification advanced in defense of it is that drug therapy of that day with few exceptions was not specific or very effective.

The earlier schools followed the dicta of Dr. Still. Some advocates adhered to them with religious fervor and became extremely bitter toward orthodox medicine as a result of the legitimate criticism made of the then osteopathic concept.

Since that time great evolutionary change has taken place in osteopathy. It is difficult to trace the chronological course of this development and to document it with relation to time. Apparently no historical account exists. We were unable to find one and the American Osteopathic Association could not furnish us with a reference to one.

A comparison of osteopathy at the turn of the century and at the present time, however, makes it obvious that such evolution took place. In its effort to develop an orderly account of this change the committee consulted books, periodicals and numerous individuals. It then propounded questions to the deans of osteopathic schools and the representatives of the American Osteopathic Association. In addition, the committee investigated the curriculum development and the legal requirements for licensure of osteopaths at various stages. Certain facts which establish a partial history were developed.

As pointed out previously, the early schools adhered to the drugless and "cultist" theories of Dr. Still. Of the six existing schools most apparently began as institutions following these teachings. Some may have begun on a broader base but all largely followed his theories.

At some time all departed from this dogma and began to turn toward the pattern of medical schools. The exact time of the departure of each is difficult to ascertain.

The composite answer of the schools of osteopathy states that some aspects of drug therapy always were included in their teaching but these were limited in extent. All schools instituted informal teaching of pharmacology prior to the listing of formal courses in printed announcements. We believe that pharmacology was included because the inadequacy of drugless therapy was recognized but that formal listing of such courses was delayed out of deference to the opposition of the so-called "old religionists" in osteopathy.

One school gave informal instruction in drug therapy prior to 1913, and in that year offered formal courses in pharmacology and materia medica. Other schools followed this pattern and in 1940 the last school made announcement of a formal course in pharmacology after having taught the subject for years without according it an official listing.

As nearly as we can ascertain, pharmacology has been taught in one school for more than 40 years and in most, if not all schools, for more than 25 years. It has been taught on a formal and announced basis in all schools for periods varying between 13 and 40 years.

Another approach to documentation of the evolution of osteopathy is found in the history of licensure. The current extent of licenses will be discussed later. Differing types of examining boards exist. Some consist solely of doctors of medicine, some solely of doctors of osteopathy and some are composed of both. In the last type, doctors of medicine usually, and probably always, predominate in numbers.

In 1913, and perhaps as early as 1900, composite boards granted full licenses to practice medicine and surgery to osteopathic graduates. Since that time, doctors of osteopathy have become eligible to full licensure in a majority of states.

In 1922, one state established, by law, entrance requirements and curriculum requirements, identical with those required of medical schools, which had to be fulfilled prior to admission to examination for full licensure by the osteopathic examining board. The osteopathic board in this state is said to have maintained high standards since that date. One school qualified to meet its requirements in 1922, two by 1940, and the remaining three by 1947.

The Osteopathic Concept. The original ideas of Dr. Still were mentioned earlier. As the evolution of osteopathy has taken place the concept of osteopathy has changed. Concise definitions of modern osteopathy and the current osteopathic concept are difficult to find.

One expression of the osteopathic concept is found in the following: "Stated simply, the principles are: (1) The normal body contains within itself the mechanisms of defense and repair in injuries resulting from trauma, infections and other toxic agents; (2) the body is a unit and abnormal structure or function in one part exerts abnormal influence in other parts; (3) the body can function best in defense and repair when it is in correct structural arrangement."

A modification of the foregoing is found in another source:

The statement, "The body contains within itself the power to cure all of its curable ills," is subject to certain qualifications, which must be applied to the patient under consideration. Some of these are:

1. The body must be in the best mechanical adjustment possible.

2. The body must have the most adequate circulation possible.

3. The body must have available, from food or medication, the required chemicals for proper function.

4. The body must have a physiological reserve to affect the necessary compromise with its environment.

5. The body must be relieved of all impediments to proper function.

6. The body must be relieved of all sociopsychological impediments which must be recognized and dealt with as effectively as possible.

In addition, one encounters statements such as "Contrary to erroneous opinions of persons not acquainted with the basic principles of osteopathy, it has never been a drugless school of practice. Surgery and the use of drugs always have been included within its practice."

The committee reviewed a series of six articles relative to the osteopathic concept appearing in the *Forum of Osteopathy*, a publication of the American Osteopathic Association, from March to August 1952. These articles were based upon statements by many individual osteopathic physicians with editorial comment by the author of the compilation.

The statements quoted are often somewhat contradictory and the author comments upon the validity of the differing points of view expressed in them. Predominant opinion seems to stress that osteopathy encompasses the full field of medicine and that its present and future development depend upon an attitude of acceptance of new theories and new methods of diagnosis and treatment of disease as the value of these methods is demonstrated.

Discussions with leaders of the osteopathic profession and teachers in their schools reflect some difference in points of view but their opinions are almost unanimous that the only basic difference between osteopathy and medicine at the present time is the degree of emphasis placed upon manipulative therapy. It is stated by some that manipulative therapy has not been subjected to critical evaluation and that thorough investigation of its value by trained clinical research workers in our medical institutions would be welcomed. There is an inference that such evaluation might exert great influence upon the future of osteopathy.

As will be shown by an analysis of the curricula of the colleges of osteopathy, medicine as we understand the term, in its various branches probably occupies more than 90 per cent of the instructional hours. The total clock hours of instruction in osteopathic schools is on the average about 25 per cent greater than the corresponding time devoted to instruction in medical schools. The increased number of hours, in the opinion of medical educators, is a disadvantage rather than an advantage but demonstrates that the number of clock hours devoted to teaching of medicine in osteopathic schools is at least as great as that in medical schools.

Colleges of Osteopathy. There are six osteopathic schools currently operating in the United States. These are:

1. Kirksville College of Osteopathy and Surgery, Kirksville, Mo., 1892.

2. College of Osteopathic Physicians and Surgeons, Los Angeles, Calif., 1896.

3. Philadelphia College of Osteopathy, Philadelphia, Pa., 1898.

4. Des Moines Still College of Osteopathy and Surgery, Des Moines, Iowa, 1898.

5. Chicago College of Osteopathy, Chicago, Ill., 1900.

6. Kansas City College of Osteopathy and Surgery, Kansas City, Mo., 1916.

Some of the present schools have resulted from mergers of other schools and some have undergone changes in name similar to the evolution of some of our schools of medicine. The dates indicate the founding of the original school in continuous operation.

The organizational structure of the colleges of osteopathy is essentially identical. All are incorporated as non-profit educational institutions governed by boards of trustees which appoint the administrative officers and the faculties. None are operated for profit. None is a part of or associated with universities or other colleges.

None is tax supported. Finances are derived mainly from contributions by alumni and tuition fees. A well organized and vigorous campaign begun by the American Osteopathic Association in 1943 has collected over five million dollars. Some contributions come from private philanthropy. The United States Public Health Service makes grants to all schools for such projects as education in cancer and heart disease. The Navy and the U. S. Public Health Service have made some grants for research. One school derives minor support from the state for V.D. and indigent care.

Faculties. Of 487 faculty members listed in the six colleges, 32 are recorded as having degrees of A.B. or B.S. without additional degrees; 273 have

the degree D.O. only; 96 have both A.B. or B.S. and D.O. degrees; 13 hold M.A. or M.S. degrees only; 36 are listed as having M.A. or M.S. and D.O. degrees; 26 have Ph.D. standing; 10 are listed as M.D. and 6 have the degree of D.D.S. Reports from the osteopathic colleges show that there are 15 doctors of medicine teaching in five schools at the present time.

In some catalogs only the degree is listed. In others, however, the institution conferring it also is listed and practically all the A.B., B.S., M.A., M.S., and Ph.D. degrees so listed were conferred by well recognized educational institutions. Some of the M.D. degrees were granted by currently approved schools of medicine. Others were not.

The great majority of the faculty members holding bachelor's and master's degrees alone and those with Ph.D. and M.D. degrees teach in the fields of basic sciences. Some with additional D.O. degrees are in clinical fields.

Admission Requirements and Students. All schools require three years of preprofessional study of a grade leading to a baccalaureate degree in an acceptable university or college and the curriculum content of preosteopathic course requirements is the same as that for admission to schools of medicine.

Analysis of data from all schools shows that 49 per cent to 78 per cent of the students enrolled in present classes hold the degree of A.B. or B.S. Degrees of M.A. or M.S. are not uncommon and an occasional Ph.D. is listed. Sixty-four per cent of all current students hold baccalaureate or higher degrees. The most recent classes show substantially higher figures.

Many students have matriculated from teachers' or junior colleges but many from outstanding colleges and universities, some of which have medical departments. Among these Michigan, Missouri, Illinois, Minnesota, Wisconsin, Iowa, Kansas, Pittsburgh, Ohio State, Indiana, New York University, Washington University, the University of Washington and Northwestern contribute substantial numbers and Harvard, Yale, Cornell and Columbia are represented. This proportion is progressively increasing and that from lesser institutions is decreasing.

Some schools select students partially on the basis of aptitude tests.

Classes. The classes vary from 60 to almost 100 students each, depending upon the school. The enrollments of the schools in 1952 varied from 240 to 368 and totaled 1,921 students. Every state was represented. Enrollments reflected the geographical location of the school to some degree but the larger states and those with larger numbers of doctors of osteopathy and wider scope of licensure furnished the bulk of the students. The largest numbers had residence in California, Michigan, Pennsylvania, Missouri, Ohio, Texas, Illinois, New York. Iowa, New Jersey, Oklahoma and Florida. A number of students came from foreign countries.

Curriculum. Review of the catalogs shows that the portion of the curriculum devoted to teaching of osteopathic theory and technique varies on a mathematical basis—from 4 to 14 per cent of the total number of clock hours. A breakdown of the courses, however, shows instruction in history taking, physical examinations, physical therapy and rehabilitation sometimes included under osteopathic titles. On the other hand, osteopathic instruction is integrated with other clinical teaching.

It is difficult to determine the exact number of hours devoted to osteopathic teaching in contradistinction to basic sciences and medicine in its various fields and the proportion of these hours to the total program. It is estimated that an average of more than 90 per cent and perhaps 95 per cent of the instructional hours are devoted to basic sciences, the fields of medicine, surgery and obstetrics. These courses of instruction and the distribution of hours correspond closely to those of medical schools.

All colleges of osteopathy require four year courses. Most operate upon a semester system but the quarter plan exists in some. The total clock hours vary from 5,044 to 6,526 in different schools and average 5,756 for all schools.

The distribution of hours devoted to didactic, clinical and laboratory instruction varies. The same is true of medical schools but the impression is gained that somewhat greater emphasis is placed upon didactic teaching in schools of osteopathy. In some schools, however, introduction to clinical subjects occurs early and is fairly extensive.

Quality of Instruction. The committee had no entirely satisfactory method of evaluating the quality of instruction in clinical subjects. Results of examinations in basic sciences in the states requiring such examinations prior to admission to practice furnish a reasonable basis upon which to determine the quality of instruction in preclinical subjects.

Twenty-one licensing jurisdictions require such examinations. In 1952, 3,263 doctors of medicine or medical students and 276 osteopaths or osteopathic students took basic science examinations. The ratio of osteopathic to medical candidates was about that of enrollments in schools of osteopathy to schools of medicine. Eighty-eight per cent of the medical and 84.5 per cent of the osteopathic candidates passed the 1952 basic science examinations. This is in marked contrast to 1942, when 85.6 per cent of medical and 55.4 per cent of osteopathic

candidates passed. In 10 years medical candidates showed 2.4 per cent improvement in passing basic science examinations and that for osteopathic candidates was 29.1 per cent.

The committee had one confidential communication bearing upon the quality of instruction in colleges of osteopathy as compared with schools of medicine. While this was an indirect approach and incomplete answer to the question it covered both types of schools on a wide basis.

At the end of four years of schooling the average medical student had acquired more medical knowledge than had the corresponding osteopathic student. The margin was definite but no mechanism existed to determine its extent. It must be recognized that there is variability in both classifications of school.

This same source states that the performance of a considerable number of students in the best osteopathic schools is now superior to that of the students in some medical schools. The committee believes the quality of instruction in medical schools to be definitely superior to that of osteopathic schools. There is evidence that education in osteopathic schools is improving but improvement is impeded by a lack of trained teaching personnel. This seems to be particularly true in the clinical fields.

Graduate Training. The American Osteopathic Association approves hospitals for intern and residency training. Seventy-six hospitals are approved for intern and 38 for residency training. The committee is not in a position to evaluate this training.

Number and Distribution of Osteopathic Physicians. Eleven thousand eight hundred and twenty-seven osteopathic physicians were registered in 1952. Of this total 207 were in Canada and foreign countries, 14 were in the service; 145 were out of practice; 11,461 were in practice in 48 states, the District of Columbia, Hawaii and Alaska.

According to total number of licenses, osteopathic physicians were distributed principally in the following states:

California	1,976	New Jersey	358
Missouri	1,120	Oklahoma	348
Pennsylvania	1,081	Massachusetts	291
Michigan	1,062	Florida	278
Ohio	629	Kansas	227
Texas	531	Maine	215
Iowa	472	Colorado	182
New York	472	Wisconsin	160
Illinois	416	Washington	158

This, however, does not give a true picture of distribution with reference to population. Certain small population and sparsely settled states show greater numbers in proportion. Among these are Arizona with 96, New Mexico 106 and West Virginia 129. Some states with large populations show relatively small numbers of osteopathic physicians. Connecticut has 76, Minnesota 92 and most of the southern states very few. Distribution in general tends to bear some relationship to population, geographical location, and particularly to the scope of state licensure.

Within the individual states distribution tends to follow population and trading centers much after the pattern of that of doctors of medicine. There are, however, many exceptions. As an example, certain areas in Missouri with low ratios of doctors of medicine to population show comparatively high ratios of osteopaths. The same is true of northern Maine and the upper peninsula of Michigan. There are widely distributed towns and rural areas in many states in which the only care of illness immediately available is by osteopaths or where they outnumber doctors of medicine.

Volume of Care Rendered by Osteopathic Physicians. There is no clear method of determination of the proportion of medical care rendered by members of the osteopathic profession. It is estimated that about 175,000 doctors of medicine and 11,400 doctors of osteopathy are in active practice in the United States. With this as the sole basis of computation approximately 6 per cent of the medical care of our people is rendered by osteopathic physicians.

Scope of Licensure and Administration. In some states the scope of licensure is clear. In others it is not. Courts in various states have interpreted identically worded statutes differently. In some the scope of license has not been adjudicated. This confusion is reflected in the state association, county society and individual replies to the questionnaires.

The June 1952 digest of state laws published by the American Osteopathic Association states that the graduates of the six schools of osteopathy are eligible to full license to practice medicine and surgery in the following states:

Arizona, California, Colorado, Connecticut, District of Columbia, Delaware, Florida, Hawaii, Indiana, Iowa, Kentucky, Maine, Massachusetts, Michigan, Missouri, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Texas, Utah, Vermont, Virginia, Washington, West Virginia, Wisconsin and Wyoming.

Licenses permit limited use of drugs but no major surgery in: Arkansas, Georgia, Idaho, Louisiana, Minnesota and North Dakota.

Licenses permit only manipulative therapy in: Alabama, Illinois, Kansas, Maryland, Mississippi, Montana, North Carolina and South Carolina.

There is room for legal argument concerning the exact meaning of the law in certain instances, but

this list corresponds fairly closely with the 1949 survey of the Michigan State Medical Society and with the informal opinion of the attorney of the American Medical Association. For the purpose of general consideration, it can be accepted as substantially accurate.

Most jurisdictions which grant unlimited licenses do so upon the basis of the original license without additional requirements. In a number it depends upon an examination identical with that for medical licensure and given by the medical licensing body. In some the date of graduation is a determining factor. In some states additional training and/or additional examination is required.

In some states only one type of license is granted. In others limited and unlimited licenses both exist. In the country as a whole, the numbers and proportions of limited licenses are diminishing rapidly.

The educational standards of all osteopathic schools are now, and for some time past have been, such that their graduates are eligible to unlimited licensure in all states granting such licenses.

Doctors of osteopathy tend to settle in areas in which unlimited licenses are granted. The scope of licensure in general has been gradually extended and we are informed that the legislatures of several states have measures designed for this purpose under consideration at present.

The Public and Osteopathy. Eighteen state associations indicate that patients do not readily distinguish between doctors of osteopathy and doctors of medicine. Two were in doubt and two do not answer. Fifteen believe they do so.

Ten associations believe public use of osteopaths is increasing, 20 that it is remaining static and four that it is decreasing.

In 20 states osteopaths participate in voluntary health insurance programs. In 25 they render care to injured workmen under industrial accident laws. They also serve in the Veterans Administration. There is permissive legislation allowing them to serve in the Armed Services and the United States Public Health Service but as far as we know, none has been accepted.

Postgraduate Education. In 19 states no opportunity is provided for osteopaths to obtain instruction in courses sponsored by state medical associations, county medical societies, universities or hospitals. In 16, no answer is provided to the question. In two states osteopaths have access to courses given by state associations and county societies and by health departments in five.

Relationship Between Doctors of Medicine and Osteopaths. It is considered ethical to accept patients referred by osteopaths in 23 states and unethical in 11. Consultation with osteopaths is considered ethical in eight states and unethical in 24. Joint care of a patient is considered ethical in eight states and unethical in 25.

Twenty-nine state associations believe the quality of instruction in osteopathic schools would be improved if doctors of medicine freely participated in teaching in them. Eight do not reply. Twenty-nine believe the level of osteopathic practice would be improved if postgraduate courses were more readily available to osteopaths. Twenty-two believe the over-all care of illness in their states would be improved if doctors of medicine freely participated in undergraduate and postgraduate osteopathic education. Three believe there would be no change. Three believe it would be lowered. Nine do not reply.

If ethical restrictions of association between doctors of medicine and osteopaths were removed, 18 state associations believe the over-all care of illness would be improved. Seven believe there would be no change. Seven believe it would be lowered. Five do not reply.

Fourteen state associations classify modern osteopathy as practiced in their states as "cultist healing." Twenty-three consider it *not* to be "cultist healing" according to the definition of the Principles of Ethics of the American Medical Association.

Fifteen favor removal of ethical restrictions on voluntary association between doctors of medicine and doctors of osteopathy. Sixteen oppose such action. Five do not reply and one is non-committal.

SUMMARY

1. According to published statements, and in certain states by law, the requirements for admission to schools of osteopathy are the same as those for schools of medicine. In one school 78 per cent of the students hold A.B. or B.S. degrees. The average for all six schools shows 64 per cent possess baccalaureate or higher degrees. Only a small number of these degrees were achieved after admission to osteopathic school.

2. The curricula of osteopathic schools contain the same subjects taught in schools of medicine. Minor portions of the curricula are devoted to osteopathic courses and manipulative therapy.

3. The standard of education in osteopathic schools has improved materially in recent years. As far as this applies to basic sciences the fact is demonstrated by the results of basic science examinations. It is far more difficult to evaluate the education in clinical subjects. Such information as is available indicates some but lesser progress in this field.

4. The opportunities for doctors of osteopathy to obtain postgraduate training are meager.

5. The state medical associations, the county societies and individual physicians predominantly believe that the level of osteopathic education, the standards of practice and the over-all care of the sick would be improved if doctors of medicine were able freely to participate in undergraduate and postgraduate education of osteopaths.

6. This belief is shared by leading osteopaths and osteopathic educators.

7. Doctors of osteopathy render medical and surgical care to a large but undetermined number of people of this country. There is no way of ascertaining the exact number but millions of patients are involved.

8. The scope of the osteopathic license varies from limitation to manipulative therapy in eight states to extensive or complete practice of medicine in 35 states. The trend is toward the extension of the scope of licensure.

9. Majority opinion of medical associations and individual physicians indicates that the quality of medicine practiced by osteopaths is variable and it probably differs in different states.

10. Medical opinions of osteopathy naturally vary. It is scarcely possible to compare osteopathy in such states as Maryland and Wisconsin. In the former osteopathy is limited to manipulative therapy and in the latter the state board of medical examiners recognizes the six schools of osteopathy as approved schools of medicine. It is likewise impossible to compare osteopathy in Alabama which has four osteopaths to that in California with almost 2,000. Similar difficulties are encountered even in such adjacent states as Iowa and Illinois, Missouri and Kansas, and Texas and Arkansas.

11. In 20 of the 37 states replying to the questionnaire, doctors of osteopathy participate in voluntary health insurance plans and in 18 of these in Blue Shield plans. A few states specify that the basis of participation is not quite the same as that for doctors of medicine. In 1952, six of the highest 25 individual payments by Michigan Medical Service were made to osteopaths. Osteopathic hospitals and in some instances osteopaths are compensated by Blue Cross plans.

12. In 25 of the states reporting, doctors of osteopathy render care to injured workmen under the industrial accident laws.

13. Twenty-three of the 37 states replying consider it ethical for doctors of medicine to accept referred patients from osteopaths. Eight states hold it ethical to consult with and participate with osteopaths in the care of patients. In most states some physicians consider all three categories of association to be ethical.

14. On the whole the states in which state association and individual opinions of osteopathy are highest are the states in which osteopathic licenses are unlimited or extensive. Where the scope of licensure is sharply limited or the osteopaths were few in number the opinions are less favorable.

15. In many widely distributed towns and villages all or a large part of the immediately available care of illness is furnished by osteopaths.

16. Public acceptance of osteopathy is extensive. Ten state associations report the use of services of osteopaths to be increasing, 20 that it is remaining static and only four that it is decreasing. A large number of people, through necessity, failure to distinguish between medicine and osteopathy or by choice receive their care of illness from osteopaths. Osteopaths serve in the Veterans Administration.

17. Twenty-three state associations classify modern osteopathy as practiced in their states as *not* being "cultist healing" according to the definition of our Principles of Ethics. Fourteen consider it *to be* "cultist healing."

18. Fifteen state associations favor removal of all ethical restrictions upon voluntary association between doctors of medicine and doctors of osteopathy. Sixteen do not.

19. There is difference of opinion among osteopathic physicians as to the relative importance of and the place which manipulative therapy occupies in the treatment of disease. Some hold its position to be important and others to be minor. An increasing number, particularly of more recent graduates, disavow it.

20. It is the opinion of the committee that the official viewpoint of the representatives of the American Osteopathic Association is that osteopathy includes the entire field of medicine and surgery but integrates manipulation of musculoskeletal structures with medical and surgical methods of therapy. No diagnostic or therapeutic procedure used in medicine or surgery is excluded.

Osteopathy has undergone a process of evolution which has brought it to a point of such similarity to medicine that no marked fundamental differences exist between medicine and osteopathy.

The entrance requirements for schools of osteopathy and schools of medicine are identical. The curricula have the same content, except for the inclusion of osteopathic theory, diagnosis and treatment. The period of instruction in both instances is four years. The clock hours devoted to teaching basic sciences, medicine and surgery are as great in schools of osteopathy. The level of instruction in basic sciences is demonstrated by the record of osteopathic candidates in examinations in these sub-

jects. Indirect and incomplete methods of evaluation of the quality of instruction in clinical subjects, insofar as they apply, indicate progressive improvement in this field.

There are unquestionably doctors of osteopathy still in practice who explain disease upon antiquated osteopathic theories and who rely solely upon manipulative methods of therapy, but their number is constantly decreasing. It might be argued upon this basis that osteopathy still remains "cultist healing."

Instruction in all fields of medicine and surgery has been given in some osteopathic schools for 40 years and formally in all osteopathic schools since 1940. Osteopathic teaching is integrated with these courses to some degree. It might be argued upon this basis that "cultist" aspects remain.

Nevertheless, the committee after careful study and thoughtful consideration is of the opinion that the teaching in osteopathic schools at the present time, and for some years past, does not constitute "cultist healing" as defined in our Principles of Ethics and that this stigma should be removed.

The committee believes that the level of osteopathic education and hence osteopathic practice would be raised if more doctors of medicine taught in schools of osteopathy and in postgraduate courses. This point of view is shared by a large majority of state medical associations. The only method by which this can be done is to eliminate the stigma of "cultism." As long as this stigma remains most doctors of medicine will be reluctant to participate in the education of osteopathic students and in providing postgraduate education.

Doctors of osteopathy render medical care to millions of patients.

The objectives of the American Medical Association and its responsibilities are to improve the health and medical care of the American people. The committee is of the opinion that these purposes would be served by making it possible for schools of osteopathy to draw upon the services of doctors of medicine as teachers. We should assist improvement in the education of osteopathic physicians.

The committee believes that the American Medical Association should encourage state medical associations to aid in the improvement of osteopathic postgraduate education where the state associations find this desirable and feasible.

In view of the variation in the scope of osteopathic licensure by the states, probable variation in the level of osteopathic practice in different states, widely divergent opinions and differing local conditions, the committee is of the opinion that any national policy governing the individual relationships of doctors of medicine to osteopaths would not apply equally to all states. In keeping with the autonomous nature of state associations and democratic principles the responsibility for regulation of these relationships should be assumed by the several state medical associations.

The committee is of the opinion that the meetings it has held with the Conference Committee of the American Osteopathic Association have been productive of greater understanding between the two professions and a friendly approach to mutual problems. It would be wise to continue this type of liaison in the future.

The committee also is of the opinion that it would be helpful for similar committees to be created on the state level where state associations find it desirable. Much public wrangling and acrimonious conflict might thereby be avoided.

In the past much publicity has been given to the prospect of amalgamation of the medical and osteopathic professions. While this may be an ultimate eventuality there is no indication that it would be desirable or possible in the near future. Many years will elapse before differences of opinion and prejudices will be sufficiently resolved to make such a step possible.

RECOMMENDATIONS

The committee recommends:

1. That the House of Delegates declare so little of the original concept of osteopathy remains that it does not classify medicine as currently taught in schools of osteopathy as the teaching of "cultist" healing.

2. That the House of Delegates state that pursuant to the objectives and responsibilities of the American Medical Association which are to improve the health and medical care of the American people, it is the policy of the Association to encourage improvement in undergraduate and postgraduate education of doctors of osteopathy.

3. That the House of Delegates declare that the relationship of doctors of medicine to doctors of osteopathy is a matter for determination by the state medical associations of the several states and that the state associations be requested to accept this responsibility.

4. That the Committee for the Study of Relations Between Osteopathy and Medicine or a similar committee be established as a continuing body.



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Causes of Children's Headaches Legion

Headaches in children are as varied and as widely dissimilar as they are in grownups. They may be caused by eyestrain, illness or excitement, or may be a simple excuse to escape from an unpleasant task, according to Dr. Noah D. Fabricant, Chicago.

Whatever their cause and whether they are simple or complex, children's headaches are fairly obvious and yield handsome response to medical care, Dr. Fabricant wrote in a recent issue of *Today's Health* magazine, published by the American Medical Association.

Eyestrain is one of the better known causes of headaches in children, he stated, adding:

"Temporary blurring of vision is experienced, and the eyes feel tired, hot and gritty—a feeling that may eventually give place to a dull ache. They tend to become reddened and watery, and chronic irritability leads to constant rubbing of the eyes. Headache may occur in every possible nook and corner of the head, from the top of the skull to the nape of the neck. It can show up as a dull, persistent pain in the forehead, the back of the eyes or the region of the temples."

Another cause of children's headaches is anemia, Dr. Fabricant said. A simple blood examination will confirm this, and relief can be obtained quickly by

(Continued on Page 56)

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*Glazebrook, A. J.: Brit. M. J., 2:1328 (Dec. 20) 1952.

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Causes of Children's Headaches Legion

(Continued from Page 46)

adequate treatment. Children also frequently complain of headaches upon arising in the morning and immediately after naps. Such headaches, he said, may represent a need for carbohydrates—a need which can be remedied by additional consumption of sweets.

Acute illnesses commencing with high fever may cause headaches in children, Dr. Fabricant stated. A headache may be an early symptom of scarlet fever, mumps, measles, chickenpox, kidney disorders, poliomyelitis, or an infection in the ear.

However, a child may just have "headaches of convenience," Dr. Fabricant pointed out, adding:

"By imitating his parents, a young child may quickly grasp the excuse value of headache as a means of escaping from an undesirable or unpleasant task."

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World Health Organization Votes Budget Of $8.5 Million

The World Health Organization has adopted a budget of $8,487,700 for calendar 1954. The total is $12,605 over the 1953 budget; however, World Health Organization officials point to a $5 million reduction in United Nations technical assistance funds for health programs and uncertainty over how much will be available under the UN International Children's Emergency Fund. The U. S. share of the 1954 World Health Organization budget will be about a third of the total or $2.8 million. Assessments are made against 70 member states and three associate members.

—The A.M.A. Washington Letter

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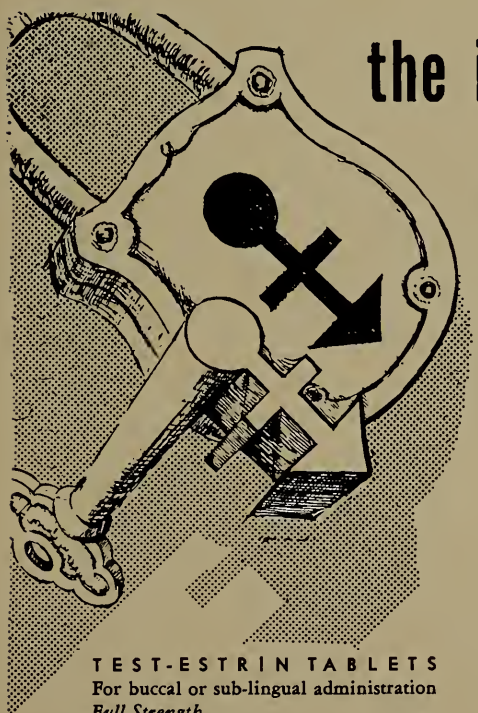
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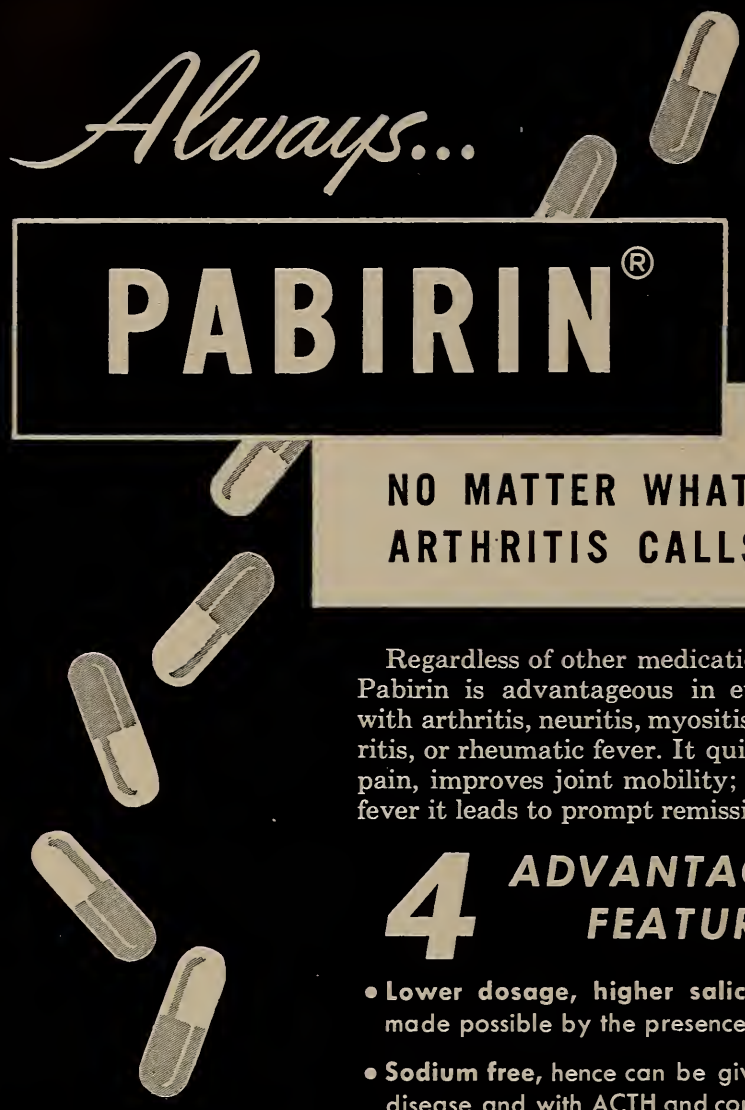
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More Than 3,000,000 Babies Born In Hospitals in 1952

For the first time in the history of American medicine, more than three million babies were born in hospitals within a year's period, it was disclosed in the 32nd annual report of the Council on Medical Education and Hospitals of the American Medical Association.

A total of 3,170,495 hospital births were recorded during 1952—one live baby every 9.9 seconds—according to the report, which appeared in a recent issue of the *Journal of the American Medical Association*. This total was 80 per cent of the estimated 3,910,000 births in the United States during 1952.

In less than 25 years, the nation's hospital birth rate has increased five-fold. In 1929, 621,898 births were recorded in registered hospitals; the million mark was exceeded in 1938, and the two-million total in 1946. During 1951, 2,999,371 births occurred in registered hospitals.

American hospital service showed an over-all upgrade during 1952, the report pointed out. The 6,665 registered hospitals in the country reported a bed capacity of 1,541,615, and a total of 18,914,847 admissions—one new patient every 1.6 seconds, an all-time record.

This is quite a difference from the disclosures of what is believed to be the earliest record of hospitals in the United States, prepared under the auspices of the U. S. Bureau of Education in 1873. That report contained the names of 178 hospitals that in the previous year had reported 35,604 beds and 146,472 admissions. The first complete list of hospital services in the country was published in 1909, and listed 4,359 such institutions.

The increasing problems of mental health were highlighted in the present report. Although there are only 585 psychiatric hospitals, they have a greater bed capacity—732,929—than is found in any other group. Again the average daily census of patients in the psychiatric hospitals is the highest that has been recorded in this field. The present total of 704,056 compares with 697,521 in 1951; it represents 53.7 per cent of the daily patient load in all registered hospitals.

A total of 688,119 mental patients were under daily care in governmental institutions, while only 15,937 were in nongovernmental hospitals. Even though only 1.6 per cent of the total number of patients admitted to all hospitals during 1952 were mental patients, mental hospitals maintained an average daily census greater than the total patient load in all other registered hospitals. This is indicative of the long period of hospitalization required by such patients, the report stated.

Of the hospitals currently registered by the A.M.A., 2,078, or 31.1 per cent, operate under governmental auspices, whereas 4,587, or 68.8 per cent, are in the nongovernmental group. General hospitals, totaling 4,924, represent 73.8 per cent of all hospitals registered. They have a total bed capacity of 640,923, and rendered the greatest volume of service in the hospital field by admitting 17,760,057 patients and reporting 3,090,807 births, according to the report. Next in size is the psychiatric division, numbering 585 hospitals, with a bed capacity of 732,929. Tuberculosis sanatoriums numbered 428, with an 89,571 bed capacity.

Governmental hospitals reported a bed capacity of 1,009,623 during 1952 and nongovernmental institutions 441,992, compared to 1,097,720 and 432,268, respectively, for 1951. The governmental hospitals, with 71.3 per cent of the hospital beds, received 4,970,721, or 26.3 per cent, of the patients admitted during 1952, while nongovernmental hospitals, representing 28.6 per cent of the present bed capacity, can be credited with 13,944,126 admissions, or 73.7 per cent of all patients accepted for hospital care. This difference is a reflection of the hospitalization required by psychiatric patients, the majority of whom are cared for in governmental institutions.

An average daily census of patients in hospitals during 1952 was 1,309,377, compared to 1,293,653 in 1951. Of 1952's total, 984,062 were constantly under treatment in governmental hospitals, whereas the average daily census in the nongovernmental group was 325,315—another reflection of psychiatric hospitalization.

The average bed occupancy in the hospitals registered by the A.M.A. rose from 84.5 in 1951 to 84.9 in 1952, the report stated. Governmental hospitals reported 89.4 per cent occupancy, while nongovernmental institutions reported a rate of 73.6 per cent. The maximum limit of operating efficiency in general hospitals is considered between 80 and 85 per cent. Classification of hospitals by types of service showed a great variation in the percentage of beds occupied. In isolation hospitals, 40.9 per cent of the beds were occupied, 96.0 per cent in psychiatric institutions, 84.0 per cent in tuberculosis hospitals, and 74.1 per cent in general hospitals.

Again in 1952, the average length of stay per patient in governmental general hospitals was more than twice that per patient in nongovernmental institutions, it was shown by the report. The average stay in governmental general hospitals was 16.4 days, as contrasted to 7.5 days in nongovernmental general hospitals. In 1951, the average stay was 17.0 days in governmental institutions and 7.7 days in nongovernmental.

The report was prepared by Dr. F. H. Arestad, Chicago, associate secretary of the council, and Miss Mary A. McGovern, Chicago, a member of the council's staff.

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(Continued from Page 52)

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214,667 Physicians in United States Set All-Time Record

There were more physicians in the United States at the close of 1952—214,667—than at any other time in its history, it was disclosed in the 51st annual medical licensure report of the Council on Medical Education and Hospitals of the American Medical Association.

During 1952, 6,816 persons were licensed to practice medicine in this country for the first time. During the same period, 3,829 deaths of physicians were reported to the A.M.A., giving a net increase of 2,987 in the physician population of the nation. In 1951, an increase of 2,640 was reported.

In the 18-year period from 1935 to 1952, there have been 110,700 additions to the medical profession. This is the result of the increase in the production of physicians under accelerated programs in medical schools, expanded facilities and the licensure of foreign-trained physicians, the report stated.

Of the total number of physicians in the United States at the close of 1952, 151,363 were engaged in private practice, 6,677 were in full-time research and teaching, 28,366 were interns, residents, and physicians engaged in hospital administration, 8,166 were retired or not in practice, and 20,095 were in the government services.

Medical licensure in this country is a "state right" and is entirely under the jurisdiction of the governments of the individual states, it was emphasized by Dr. Donald G. Anderson, Chicago, secretary of the council. The report, which appeared in a recent issue of the *Journal of the American Medical Association*, was prepared by Dr. Anderson and Mrs. Anne Tipner, Chicago, a member of the council's staff.

"It is the function of the individual states to determine who shall practice within their borders and to maintain high standards of medical practice in accordance with their own rules and regulations," Dr. Anderson stated. "The power to license physicians is exercised through the medical licensing boards of each state."

A total of 13,228 licenses to practice medicine were issued in the continental United States, its possessions and its territories during 1952: this included 6,885 issued to persons for the first time. The remainder were issued to physicians who moved their practice from one state to another. These licenses were issued upon examination or certification of credentials.

The greatest number of licenses, 1,581, were issued in California. New York licensed 1,292 physicians, and more than 500 licenses were issued in Florida, Illinois, Ohio, Pennsylvania, and Texas. Delaware, Maine, Montana, Nevada, North Dakota, South Dakota, Vermont and Wyoming each issued less than 50.

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Successful Transplant of Part of Main Artery Is Reported

The *Journal of the American Medical Association* recently reported the successful transplant of a segment of the aorta from a 21-year-old man, who had died of injuries, to a 46-year-old county sheriff. Both men were unidentified.

The operation, which lasted four hours and 40 minutes, was performed last January 5 in the Methodist Hospital at Houston, Texas, by Drs. Michael E. De Bakey and Denton A. Cooley, both of whom are connected with the department of surgery, Baylor University College of Medicine, Houston.

The two doctors stated that they last heard from their patient on May 2 and at that time he was showing continued improvement with complete relief of the painful symptoms suffered before the operation, and had gained 40 pounds.

The patient was first admitted to Methodist Hospital in December. He complained of severe back and abdominal pain. A series of tests and x-ray examinations revealed a balloon-like protrusion of the aorta behind the heart.

On January 5 the patient underwent surgery to correct the defect. An aorta graft, obtained six days previously from a man who had been injured fatally, was prepared for transplant. The graft originally was obtained under sterile conditions two hours after the donor died and was kept for a time in sodium chloride solution containing both streptomycin and penicillin.

Following careful preparatory surgery, the patient's aorta was clamped off, the diseased section removed and the new artery was sutured in place. The doctors said that as the aortic clamps, shutting off the blood supply through the artery, were released slowly, the patient's blood pressure dropped immediately to normal and remained at that level throughout the remainder of the operation. There was only minimal bleeding when the actual separation was made, and after a few minutes this stopped completely.

The patient was discharged from the hospital 13 days after the operation and resumed his duties as county sheriff one month later.

This is the first case of such a transplant where the patient was living several months after the operation. One other case is reported in the medical literature, but the surgical technique was different, and the patient died three months later.

The doctors, in their *Journal* article, said that the aorta was clamped off for 45 minutes without any apparent ill effects to other main organs of the body.

"Although it is not possible to draw conclusions from a single case," the doctors pointed out, "the fact remains that the 45-minute period of occlusion was well tolerated by the patient. This is a matter of considerable importance, however, since the fea-

(Continued on Page 12)

Tattooing Used To Camouflage Birthmarks on Face and Neck

Tattooing, a practice which has been traced back as far as 2,000 B.C. in Egypt, is being used effectively to permanently camouflage deep-seated, port-wine stain birthmarks, according to Dr. Herbert Conway, New York plastic surgeon.

Nevus flammeus, the medical terminology for the stain, is caused by abnormal capillary dilations which impart the characteristic red or purple color to the birthmark. The stain frequently covers a large portion of the face or neck and often has been of such psychological importance to the afflicted person as to have adverse effects on his personality and social adjustment.

Dr. Conway, associated with the New York Hospital-Cornell Medical Center, described the tattooing procedure in a recent issue of the *Journal of the American Medical Association.*

An 83 per cent rate of satisfactory results has been obtained by the technique in cases where the dilated blood vessels lie beneath the dermis or in the deeper portion of the dermis itself, he reported. Where the abnormal capillaries are immediately beneath the epidermis, the procedure is unsatisfactory. The technique involves the injection of pigment of natural skin color into the dermis to hide the stain.

"The pigment must be deposited in the dermis if it is to remain permanently," Dr. Conway explained. "Experience has shown, however, that a high percentage of these nevi fall into the classification in which tattooing achieves the desired result."

The pigments, insoluble, are mixed into a thick paste with sterile water and placed by brush onto the skin and into the open end of the barrel of the instrument containing the needle. The needle's oscillations are regulated by a foot pedal, usually at a rate of from 3,000 to 3,500 movements per minute.

The particles of pigment are deposited at varying depths in the dermis. A set screw regulates the depth of penetration.

"There need be no hesitancy in tattooing directly into the eyebrow or temporal hair line," Dr. Conway said.

The first treatment is applied over a small area, a record being kept of the combination of colors, he said. The final effect cannot be evaluated until three or four weeks later.

"Once the combination of pigments best suited to the patient has been determined, treatments are given at intervals of four weeks until the entire lesion has been tattooed," Dr. Conway said. "An area of from 4 to 5 square inches may be treated in one hour by a skilled technician."

Lesions covering about one-half of the face often required from 12 to 20 treatments, he pointed out.

(Continued on Page 14)



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Successful Transplant of Part of Main Artery Is Reported

(Continued from Page 10)

sibility as well as the facility of the procedure is to a great extent dependent upon it."

They also pointed out that while it is "too early to determine the ultimate results of this method of surgical treatment of these aneurysms," there is reason to believe, in the opinion of the two Texas doctors, that grafts of this type "provide a better approach to the problem than was possible heretofore."

"Its ultimate clinical value, as well as certain technical considerations concerned with its performance and the most desirable material for bridging the defect, must await further observation and experience," the article said.

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Tattooing Used To Camouflage Birthmarks on Face and Neck

(Continued from Page 10)

Seven patients in whom port-wine stains covered large areas of both sides of the face required more than 20 treatments. In one case, 27 treatments were required.

"The procedure is attended by only slight discomfort, which the average adult patient tolerates without anesthesia," Dr. Conway reported. The comfort of the patient may be promoted by mixing of the powdered pigments with solution of procaine hydrochloride.

"Children usually require local anesthesia. Treatment is delayed until the age of eight years if possible, as general anesthesia (ether) is necessary in younger children. In patients in whom general anesthesia has been necessary, the interval between treatments has been increased to three months, to prevent development of complications of anesthesia or undue aversion to the induction of anesthesia in the child."

Of 310 persons who applied for treatment in seven years, 47 (15 per cent) were rejected because biopsy or trial treatment showed the lesion was subepidermal, Dr. Conway reported.

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Alcoholism May Cause Convulsions Late in Life

Alcoholism, hypertension, and severe closed head injuries may be contributing factors in the development of convulsions late in life, it was reported in a recent issue of the *Journal of the American Medical Association.*

A study by Dr. Louis Berlin, Mt. Vernon, New York, of 125 ambulatory men in whom convulsions occurred for the first time at or after 35 years of age disclosed that such causes contributed to the development of grand mal seizures in 32.5 per cent of the cases. Twenty patients indulged excessively in alcohol prior to the development of their seizures, 14 had suffered severe closed head injuries without gross sequelae other than epilepsy, and 12 had hypertension and/or coronary artery disease.

Convulsions appearing for the first time after 35 years of age may presage the appearance of the more obvious manifestations of progressive brain damage by tumors, blood vessel disease or degenerative diseases, according to Dr. Berlin. However, he added that "in at least 50 per cent of patients who have grand mal seizures without other abnormal findings, no destructive lesion of the brain will develop, and they will have a long course without cerebral deterioration."

None of the 125 cases studied by Dr. Berlin showed any significant abnormalities in their neurological status or spinal fluid or upon x-ray examination of their skull at the onset of the seizures.

"Fifty-three per cent were observed four or more years after onset of the seizures without showing evidence of progressive degeneration or destructive lesion of the brain," he stated.

Dr. Berlin is associated with the neurological section of the Bronx Veterans Administration Hospital, Bronx, N. Y., and the department of medicine (neurology) of Cornell University Medical College.



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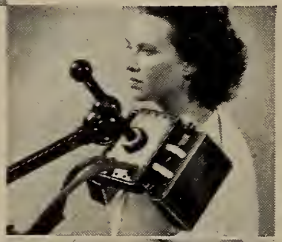
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Summer Time Is Chigger Time

Beware! It's Eutrombicula alfreddugesi (Trombicula irritans) time again.

Eutrombicula alfreddugesi (Trombicula irritans) is a big name for a tiny mite which will harass millions of picknickers, gardeners and farmers throughout a large section of the United States this summer. Its popular—or rather, unpopular—name is chigger, or red bug.

Chiggers, the larval stage of mites, usually attack humans at the ankles and lower legs, causing an intense itching which often lasts for several days, according to Dr. Carl J. Potthoff, Albuquerque, New Mexico. The parasite inserts its mouth into the skin, and engorges upon lymph and, occasionally, blood.

How to prevent chigger bites and what to do after such a bite has been received was described by Dr. Potthoff in a recent issue of *Today's Health* magazine, published by the American Medical Association.

1. As a temporary preventive, dust flowers of sulfur around the ankles. A two per cent DDT powder also is effective, but may be dangerous.

2. Sprinkling or rinsing the socks and lower part of the trouser legs with an ounce or so of five per cent emulsion of dimethyl phthalate (or dibutyl phthalate) in two per cent soap solution has preventive value for several weeks. This preparation, however, injures sensitive skin and only should be used under medical supervision.

3. A warm soap bath with extremely careful brushing removes the mites soon after exposure; the mites otherwise may spend a day or more engorging themselves. Local application of kerosene further insures removal.

4. Some relief from the intense itching may be

(Continued on Page 26)

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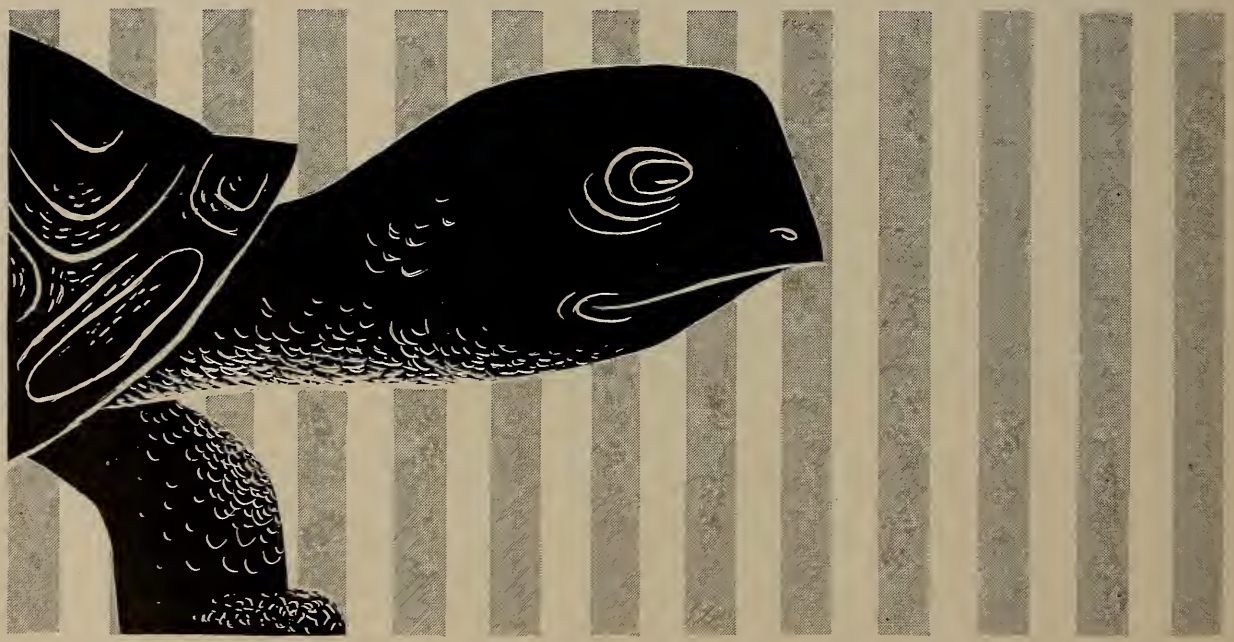
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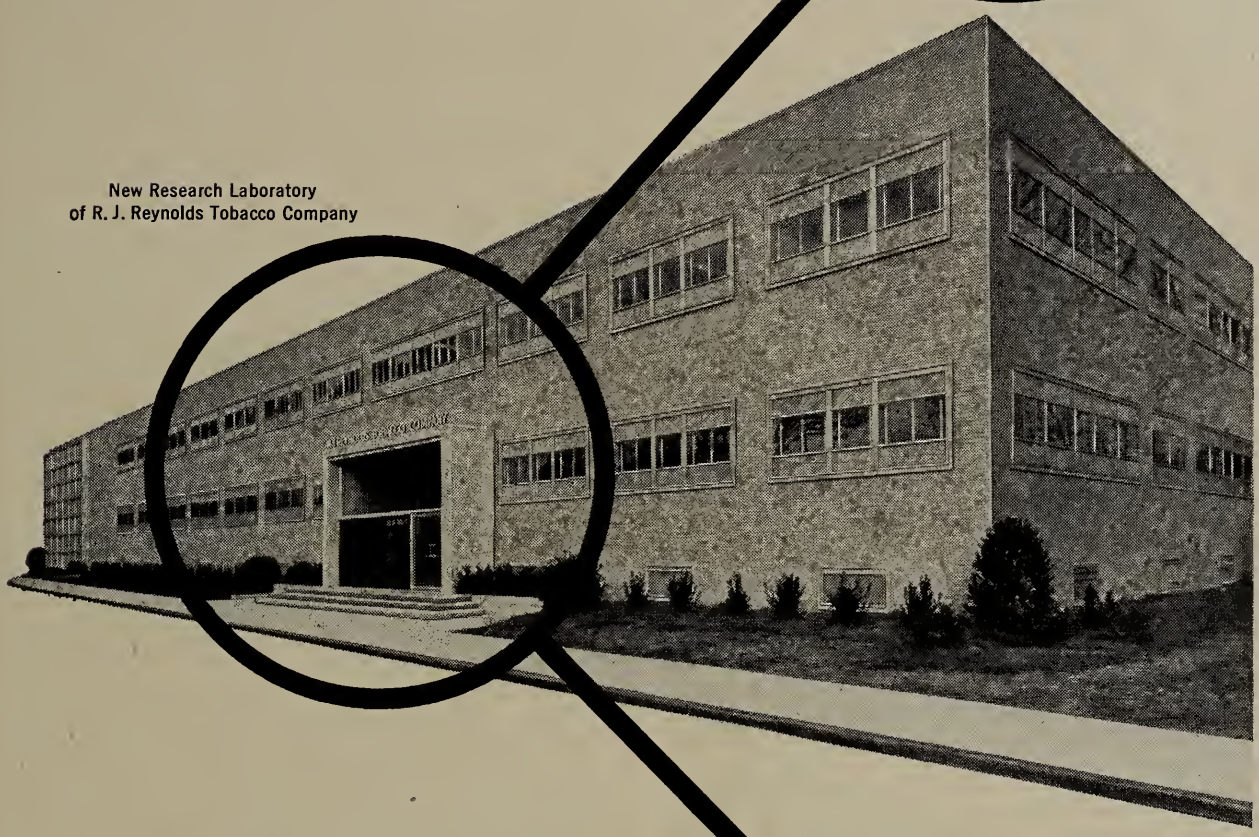
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Tells of Dangers in Fish Lens Protein Use in Cataract Therapy

Danger in the use of fish lens protein in the treatment of cataracts was pointed out in a recent issue of the *Journal of the American Medical Association.*

Warnings were sounded in a special report by the division of medical sciences of the National Research Council, and in a report of a New York ophthalmologist.

Widespread interest in the nonsurgical treatment of cataracts with injections of fish lens protein was shown after publication of an article on alleged benefits, which appeared last September in a scientific weekly.

The principal author was R. F. Shropshire, an ex-convict who has posed as a doctor of medicine. Shropshire, according to latest authentic information, is being held in Florida State Prison at Raiford for a hearing on alleged violation of parole. He had been sentenced, after pleas of guilty, to two consecutive five-year terms for forging prescriptions for narcotics.

Cataract Institute, Inc., was formed in New York. A clinic was established at South Kortright, N. Y., last January. The Drake Hotel at Stamford-in-the-Catskills, N. Y., was converted into a special residence to accommodate patients and guests coming to the cataract clinic for treatment.

In view of the intense interest displayed by the public, the Council of the American Academy of Ophthalmology and Otolaryngology asked the National Research Council to make an investigation of the authors' claims. The research council's committee on ophthalmology was assigned the study.

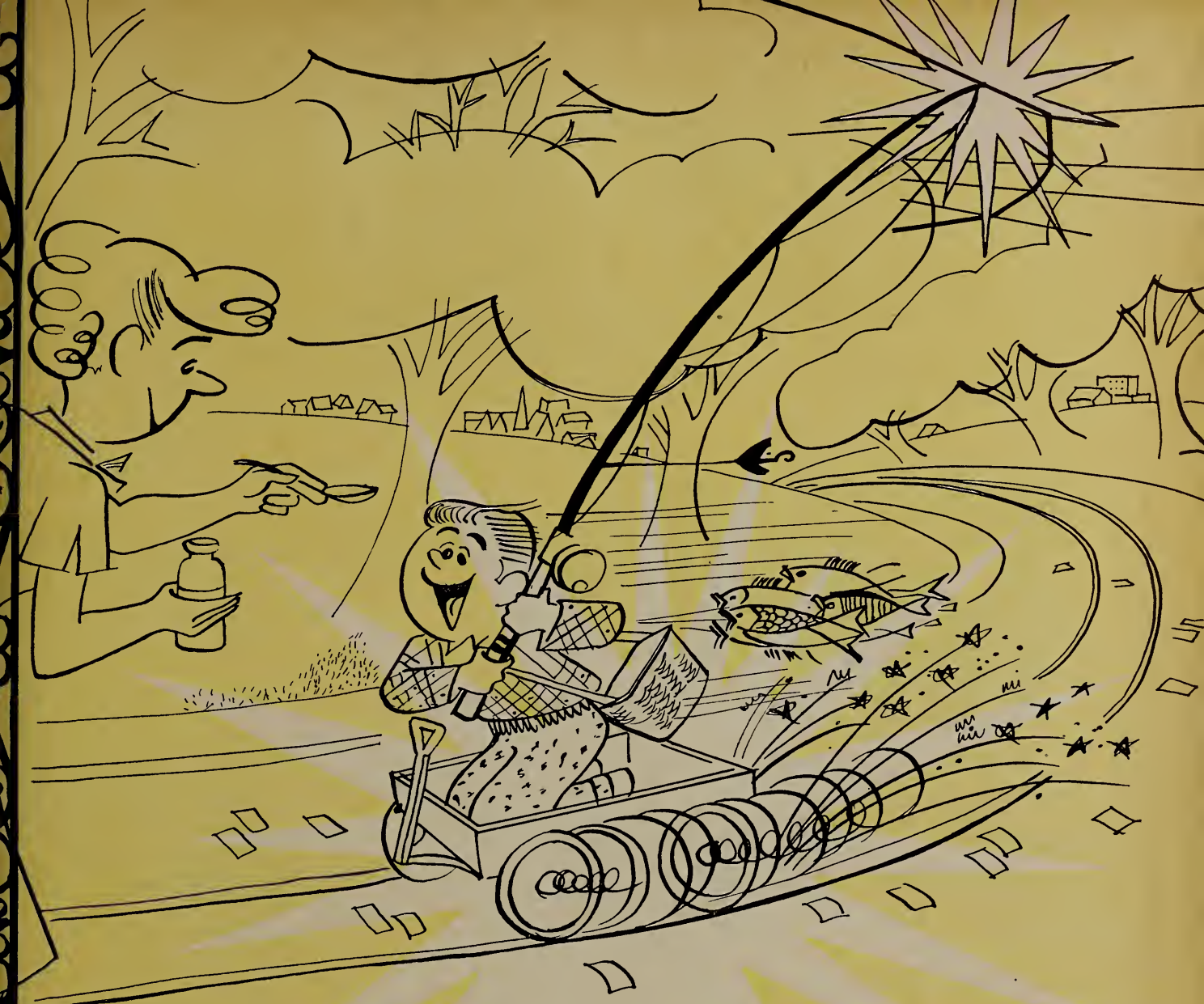
The National Research Council's report said. in part:

"In summary, the committee found nothing in the theoretical background or in the experimental and clinical results of this therapy to recommend it. It did, however, find evidence that the treatment might seriously interfere with the subsequent surgical removal of the cataracts that it had failed to cure.

"Because of the total lack of evidence that the lens antigen treatment of cataract described by Mr. R. F. Shropshire has an efficacy; because adequate evidence is now available to the committee that it is, in fact, without demonstrable efficacy; and because treatments of this type have been thoroughly investigated in the past and proved not only invalid but potentially dangerous to the patient, this committee does not recommend further investigation of this treatment by any agency."

Dr. Goodwin M. Breinin of the department of ophthalmology, New York University Postgraduate Medical School, in the current *Journal of the American Medical Association*, reported three cases in which the fish lens protein was used. He concluded:

(Continued on Page 26)



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1-183B

Persistent Bone Pain May Be Indicative Of Bone Tumor

Persistent bone, joint or muscle pain, especially when the involved part is at rest, may be indicative of primary malignant tumor of the bone, it was reported in a recent issue of the *Journal of the American Medical Association*.

Such pain is the most significant symptom of this type of malignancy, and usually precedes any objective evidence of the new growth, the article stated, adding:

"Occasionally, when the lower extremity is involved, a limp will appear before there is any pain. The character of the pain varies from a recurrent, rheumatic type of discomfort to a relatively sudden, intense pain. When it has become severe enough to produce disability, the patient usually seeks medical advice."

As is the case with any type of malignancy, the sooner a definitive diagnosis is made and the earlier adequate treatment instituted, the more favorable the prognosis, according to Drs. G. Edmund Haggart and Joseph W. Copel, Boston. The doctors are associated with the department of orthopedic surgery, Lahey Clinic.



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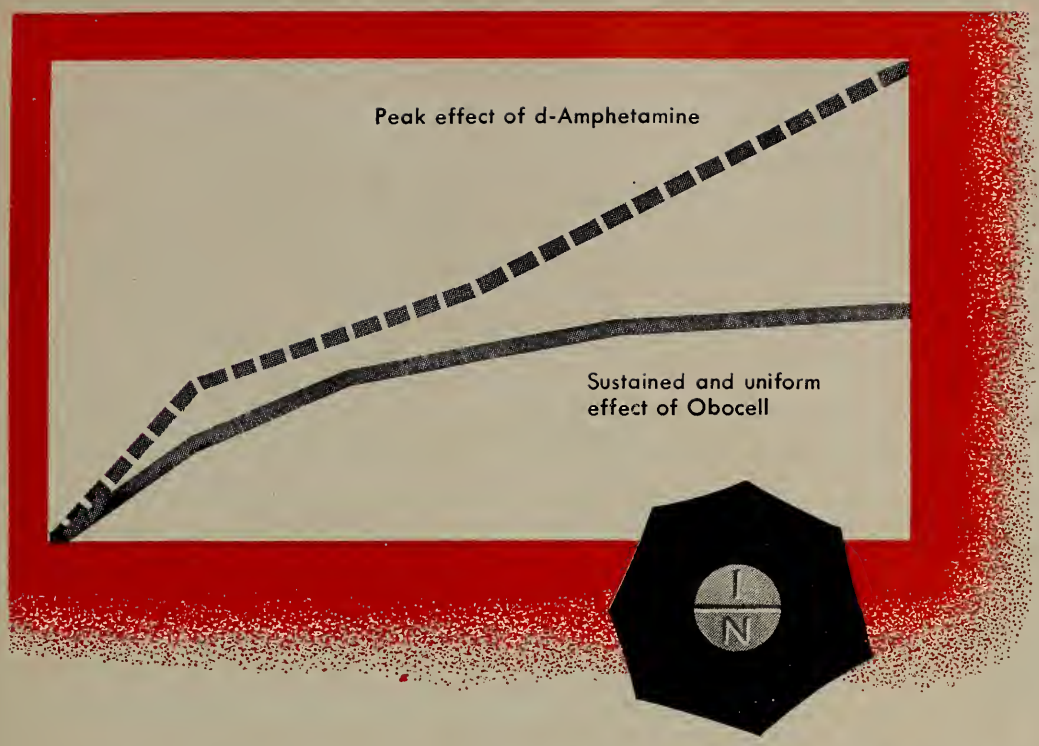
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Summer Time Is Chigger Time

(Continued from Page 17)

obtained by the application of a weak ammonia solution, a baking soda solution or an astringent ointment or solution.

Dr. Potthoff pointed out that chiggers lay their eggs in moist soil. Upon hatching, the barely visible, orange-red larvae attempt to attach themselves to any passing vertebrates, such as rodents, birds, reptiles or humans.

Tells of Dangers in Fish Lens Protein Use in Cataract Therapy

(Continued from Page 22)

"Promiscuous use of fish lens protein in the therapy of cataract is a dangerous procedure that may induce a state of hypersensitivity. This may be manifested in the development of uveitis due to an antigen-antibody reaction with the patient's own lens. and secondary glaucoma may also occur. Rapid maturation of cataracts has occurred during fish lens protein treatment."



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Need of Additional Nursing and Technical Hospital Personnel

Although the number of well-trained nursing and technical personnel for hospital service and other community needs is increasing annually, there is still an acute shortage, it was stressed in the 32nd annual report of the Council on Medical Education and Hospitals of the American Medical Association.

Additional facilities, training programs and personnel will be required to meet existing shortages as well as anticipated future demands, it was added.

One of the greatest needs is in the field of nursing, the report pointed out. Although in 1952 there were 225,613 graduate nurses employed by the hospitals registered by the A.M.A. compared to 216,047 in 1951, there were only 100,595 student nurses as contrasted to 103,527 in 1951. The 1952 figure of graduate nurses is exclusive of 31,013 assigned to private duty. A total of 142,045 professional nurses, or 62.9 per cent, were utilized for general bedside care, with the remainder serving in administrative, supervisory or educational capacities.

In 1952 there were 1,079 accredited schools of professional nursing, 27 less than the number reported in 1951; nearly all such schools were sponsored by general hospitals. These schools admitted 42,103 new students during the year—an increase over 1951, but still not sufficient to meet demands, the report stated.

The role of the practical nurse in hospital service is steadily increasing as greater emphasis is being placed on the utilization of practical nursing personnel and the standardization of training programs in the field, according to the report.

Such training and utilization of practical nurses was recommended by the A.M.A. in 1948. Today, there are 310 such schools in all but five states, with an enrollment of 5,712 students. A total of 48,941 practical nurses were reported in 1952 in addition to 135,931 attendants, 90,863 nurses' aides, 25,858 orderlies and 27,483 ward maids. These figures show an over-all increase over those reported in 1951.

Of the 6,665 registered hospitals in the nation, 5,670 reported laboratory departments, 5,900 x-ray departments, and 2,838 outpatient departments. There is a continuing shortage of technical personnel to operate these and other departments although the number of approved technical schools and enrollments has increased, the report stated.

It was disclosed in the report that there are 23,822 technical laboratory workers, including 8,612 registered medical technologists, now employed in the nation's hospitals; 12,412 x-ray technicians; 4,707 physical therapists; 3,953 occupational therapists; 6,167 medical record librarians; 10,546 other medical record personnel; 8,867 dietitians; 778 clinical photographers, and 4,360 pharmacists.

(Continued in Back Advertising Section, Page 34)

Income Tax Controversy Pending

The U. S. Circuit Court of Appeals, Second Circuit, New York, recently handed down a decision which is of considerable importance to the physician so far as federal income tax is concerned.

For a number of years, the A.M.A. House of Delegates, the Board of Trustees and individual physicians have expressed concern over a ruling of the Commissioner of Internal Revenue that expenses incurred by a physician in pursuing postgraduate medical education were personal in nature and, therefore, not deductible for income tax purposes.

As J. W. Holloway, Jr., director of the A.M.A. Bureau of Legal Medicine, has said many times: It has been extremely difficult to understand the validity of such a ruling because of the fact that physicians have been permitted to deduct, for income tax purposes, the costs of attending medical meetings, of subscriptions to scientific publications, and of dues paid to medical organizations—all of the expenses being incurred by physicians to keep their "stock in trade" up to date.

Mr. Holloway has contended that if expenses of the kind enumerated were allowable, it is difficult to appreciate what distinction could logically and legally be made between them and the costs incurred by a physician in attending a formal course offered to keep him up to date in the advancement of procedures of essential value to him in the treatment of his patients.

As a result, the A.M.A. Board of Trustees authorized employment of special tax counsel to pursue this matter, in behalf of the A.M.A., to a final conclusion.

An effort first was made to induce the Commissioner of Internal Revenue to review his earlier decision declaring non-deductible expenses of this sort, but the commissioner refused, holding to his previous decision.

During the course of the study of this matter, however, it was learned that there was pending before the U. S. Tax Court a case in which a lawyer, named Coughlin, had been denied the right to deduct expenses incurred by him in attending postgraduate courses on taxation. In view of the fact that the issue involved in the lawyer's case was quite similar to the issue in which medicine was interested, the A.M.A. filed in that case a brief as amicus curiae. The Tax Court, however, held against the taxpayer, Coughlin, and an appeal was made to the U. S. Court of Appeals; the A.M.A. again filed a brief.

Oral arguments in the case before the Appellate Court were heard and the court reversed the decision of the U. S. Tax Court, holding, in effect, that the lawyer could deduct, for federal income tax purposes, the expenses incurred by him in taking a postgraduate course dealing with taxation.

California MEDICINE

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The 1952 Outbreak of Encephalitis in California

Differential Diagnosis

ROBERT H. KOKERNOT, M.D., D.V.M., M.P.H., HENRY R. SHINEFIELD, M.D., and W. ALLEN LONGSHORE, JR., M.D., M.P.H., *Berkeley*

• Clinical data adequate for analysis were available in 386 laboratory-confirmed cases of arthropod-borne encephalitis — 38 St. Louis and 348 western equine. Consistently observed symptoms varied with the age of the patient. Symptoms that occurred in a high proportion of patients in each age group were:

Less than one year of age: Fever and convulsions. (None had the St. Louis disease.)

One through four years: Fever, headache, vomiting, drowsiness, irritability, restlessness, nuchal rigidity, tremor, and sometimes convulsions.

Five through fourteen years: Headache, fever, and drowsiness. Sometimes the disease progressed no further, but if it did, nausea, vomiting, muscular pain, photophobia and limitation of neck and back flexion often were noted; and sometimes convulsions and intention tremors.

Fifteen years and older: Drowsiness, lethargy, malaise, fever, stiffness at the back of the neck and, almost always, severe intractable occipital headache associated with nausea, disturbance of vision, photophobia and vertigo.

The extreme difficulty of differential diagnosis on the basis of clinical observation was indicated by the wide range of diagnoses made in these cases before the invading organism was identified by laboratory studies.

THE PURPOSE OF THIS PAPER is to present the clinical characteristics of the arthropod-borne encephalitides as observed during the 1952 outbreak in the Central Valley of California. The objective is to set forth the salient clinical features of the so-called "typical case" and to point out the features less commonly associated with this disease. The problems in the differential diagnosis have been commented on by others.[2, 5, 9, 10, 18, 19]

The analysis of clinical material is based on 792 reported cases of acute infectious encephalitis for the period June to October, 1952. Particular attention is given to 386 laboratory confirmed cases of arthropod-borne encephalitis on which adequate clinical information was available for analysis. Of the 386 cases in which the etiologic factor was determined and there were adequate clinical data, 348 were caused by western equine virus and 38 by St. Louis virus.

The serological tests and viral isolations were performed by the Viral and Ricksettsial Disease Laboratory of the California State Department of Public Health. The etiologic factor was considered established when significant rises in titers of either complement-fixing or neutralizing antibody or both,

From the Bureau of Acute Communicable Diseases, California State Department of Public Health, Berkeley. (Dr. Shinefield participated by special assignment from the Epidemiology Section, Communicable Disease Center, Public Health Service, U. S. Department of Health, Education and Welfare, Atlanta, Georgia.)

Part of the Symposium on Encephalitis presented by the Section on Public Health at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

LABORATORY CONFIRMED CASES OF WESTERN EQUINE AND ST. LOUIS ENCEPHALITIS, PERCENT IN EACH AGE GROUP MANIFESTING SELECTED CLINICAL SIGNS AND SYMPTOMS CALIFORNIA, 1952

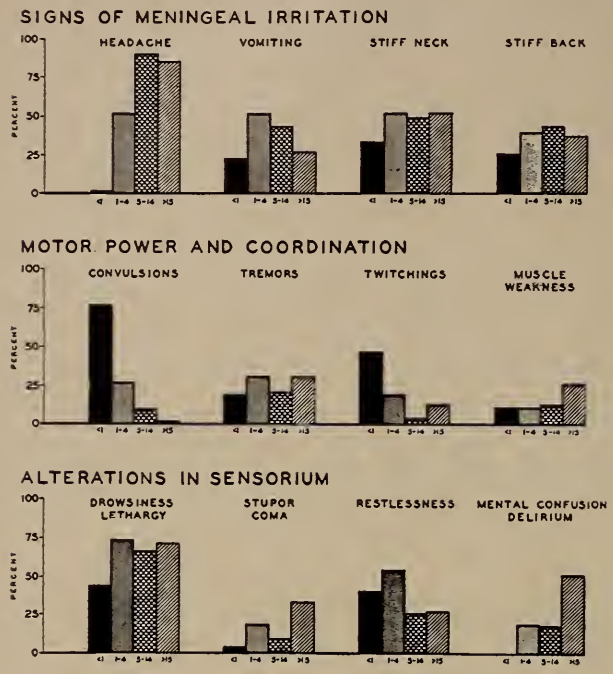


CHART 1

were demonstrable, or when in fatal cases the virus was recovered from the brain.[16]

The available data were compiled from observations by epidemiological field teams, members of hospital staffs and practicing physicians. Because of the number and variety of observers, there were difficulties in obtaining complete, consistent and comparable clinical data on this group of proven cases.

Detailed epidemiological data are given in a paper by Hollister and co-workers.[14] However, it should be pointed out that there was wide variation in the ages of patients and the ability to elicit subjective and objective symptomatologic information varied with age groups. It was felt, therefore, that a discussion of the clinical features should be considered by age groups. The four divisions that have been made are as follows: Infants less than 1 year of age, infants and children 1 through 4, children 5 through 14, and patients 15 years of age and over. Clinically the western equine and St. Louis types have much in common[8, 10, 17] and, therefore, they will be discussed together.

CLINICAL FINDINGS

All cases in infants less than one year of age were caused by the western equine virus. In this age group the only consistently noted symptoms were sudden onset of fever accompanied by convulsions.

TABLE 1.—*Signs and symptoms of arthropod-borne encephalitis* by age group*

	Under 1 year	1-4	5-14	15 and over
Total cases	94†	52†	53†	187†
Signs and Symptoms	Per cent			
Pyrexia	92	81	94	91
Less than 100° F.	1	4	6	4
100-101.9	5	6	9	7
102-103.9	38	38	53	39
104 and over	48	33	26	41
Not stated	8	19	6	9
Signs of meningeal irritation				
Headache	1	52	91	87
Nausea	1	22	30	30
Vomiting	22	52	43	27
Stiff neck	33	52	49	52
Stiff back	25	39	43	36
Alterations in sensorium				
Drowsiness	36	67	59	66
Lethargy	26	54	42	51
Malaise	5	31	34	40
Stupor	2	14	6	28
Coma	2	8	4	13
Restlessness	40	54	25	26
Mental confusion		17	15	44
Delirium		8	6	14
Motor power and coordination				
Convulsions	77	27	9	1
Tremors	19	29	20	29
Twitchings	47	19	3	12
Muscle weakness	10	10	11	26
Dysarthria		8		7
Ocular signs or symptoms				
Strabismus	1	4	4	6
Diplopia		4	4	8
Blurred vision			2	5
Photophobia		14	8	12
Conjunctivitis	1	2	2	6

* Proved cases of western equine and St. Louis encephalitis.
† Number of cases in each group.

(There was no history of antecedent complications at delivery or in the neonatal period.) It was observed that while the convulsions were frequently generalized, they often were focal, involving one or both of the upper or lower extremities. Typically, the fever ranged between 102° and 104° F.. rectally during the course of illness, but frequently the maximum was over 104° F. The temperature remained high despite chemotherapy. Findings related to tenseness of the fontanel, abnormality of reflexes, and degrees of rigidity of extremities were difficult to evaluate and could not be relied upon to aid in the diagnosis. The consistent observations in this age group were fever (in 92 per cent of cases) and convulsions (in 77 per cent) as shown in Table 1 and graphically in Chart I.

In the age group 1 through 4 years, the complaints of fever and convulsions were mentioned but were not typical characteristics. The history obtained on admittance to hospital usually indicated fever, headache, vomiting, drowsiness, irritability and restlessness of one to three days' duration. The

most consistent positive physical findings in these cases were fever, nuchal rigidity, and tremor (Table 1). Muscular weakness was observed in 10 per cent of the cases. In one case of western equine encephalitis, brain stem and cord involvement was indicated by absence of the gag reflex, facial paralysis and intercostal paralysis. Tracheotomy was necessary in that case. Within a period of nine months the child progressively recovered with no evident residual muscle weakness.

In the age group 5 through 14 years, subjective symptoms were more easily elicited (Table 1). Headache, fever and drowsiness often existed two to three days before admittance to hospital. In many instances the illness progressed no further and a definite diagnosis was made only because specimens of blood were examined. In cases in which the disease progressed, the previously mentioned subjective symptoms became more intense and were often associated with nausea, vomiting, muscular pain, photophobia and, less frequently, convulsions. These children were acutely ill, febrile and lethargic. Often there was limitation of flexion in the neck and back. Intention tremors were not infrequent and in one case the tremor was pronounced enough to suggest an initial diagnosis of Sydenham's chorea. Muscular weakness was observed in 11 per cent of patients and it persisted a week or longer. Tracheotomy was performed on one patient with western equine encephalitis in this age group because of bulbar and cervical cord involvement.

In patients 15 years of age or older, the initial complaints were "grippe-like," characterized by generalized malaise, drowsiness, lethargy, fever, tight or stiff sensation in the back of the neck, and intense headache of two to four days' duration as noted in Table 1. Headache was almost a universal symptom (86 per cent) and was commonly so severe as to dominate all subjective symptoms. The pronounced incapacitation caused by headache was frequently the sole reason adults sought medical attention. Typically, the headache was localized in the occipital region, was throbbing in character, and usually was not relieved by analgesic drugs, including narcotics. Movement, upright position or coughing often caused accentuation in the intensity of the pain. Phenomena associated with the headache included nausea, vomiting, blurring of vision, diplopia, strabismus, vertigo and photophobia.

Shortly after onset, the typical adult patient became mildly disoriented and drowsy and had signs of meningeal irritation. Tremors of intention type were not uncommon and were often rather coarse. Tremors involving facial musculature, including the lips, were rather frequently noted. In many cases the disease was mild and the patient was apparently well within a few days. Complete stupor developed in 28 per cent of the more severe cases, for the most part in patients in the higher brackets of the age group. Thirteen per cent of patients in this age group became comatose and were incontinent for three or four days or longer and finally recovered from this critical state. These observations are similar to those made by Adamson[1] in a study of cases in the Manitoba outbreak in 1941. Adamson emphasized that this is the only brain condition in which unconsciousness may persist for so long without being followed by death or gross disability.

There were three patients in this age group, two with western equine and one with St. Louis encephalitis, who had definite indications for tracheotomy. All three recovered, but the patient with St. Louis encephalitis had residual flaccid paralysis of the lower extremities of a known duration of eight months. Tracheotomy was also done in two cases in which encephalitis was diagnosed clinically but the results of laboratory tests were inconclusive.

LABORATORY DATA

Routine laboratory examination of urine and blood were of little diagnostic assistance in this study. The most common urinary finding was transient albuminuria. In examination of the blood, neither leukopenia nor leukocytosis was consistently observed. Usually slight, transient leukocytosis was noted. Examination of the cerebrospinal fluid, while important as a diagnostic aid in central nervous system disease, showed wide variation in the total number of cells as well as in the differential count. Usually the total number of cells ranged from 50 to 200 per cubic millimeter with polymorphonuclear leukocytes predominating early. Lymphocytes were more numerous later in the course of the disease. In infants the cerebrospinal fluid showed a greater degree of pleocytosis than was observed in older patients. Fifty-one per cent of infants less than one year of age had spinal fluid cell content of more than 300 per cubic millimeter and 31 per cent had more than 500 per cubic millimeter. Sugar and chloride values in all age groups were normal and the protein content was either normal or slightly to moderately elevated.

The most important aspect of the virus laboratory examination is the demonstration of a rise in titer of either complement fixing or neutralizing antibodies in two or more serum samples taken in the acute and convalescent phase of the disease. (This is discussed in detail in a paper by Lennette and coworkers.[16]) In fatal cases, specific etiological diagnosis may be made by isolation of the virus from central nervous system tissue.

DIFFERENTIAL DIAGNOSIS

The experience with encephalitis in California in 1952 reemphasized the difficulties involved in establishing on clinical grounds a diagnosis of the arthropod-borne virus encephalitides. Table 2 shows the wide range in the initial diagnoses considered by the attending physicians in cases in which laboratory tests ultimately proved either western equine or St. Louis encephalitis. The outstanding clues that should at once arouse suspicion of either the western equine or the St. Louis virus as the etiologic agent are the dramatic seasonal incidence and the rather sharply defined area of endemicity of the two diseases.[14]

Clinical laboratory aids in diagnosis are essential to rule out other conditions in which there may be primary or secondary encephalitic components. Cerebrospinal fluid examinations, including cell counts, smears, cultures, animal inoculations, chlorides and protein determinations, as well as serologic tests are important in the exclusion of acute bacterial meningitis, acute syphilitic meningitis, tuberculous meningitis and coccidioidal infection of the central nervous system. In this regard, it is important to emphasize that in a large proportion of the cases in infants the content of cells in the spinal fluid noted in association with either of the two arthropod-borne encephalitides was similar to the cell content associated with bacterial infection. Thus, cell content of 500 or more per cubic millimeter does not rule out virus encephalitis.

A complete case history supplemented by physical and laboratory examinations will aid in ruling out such conditions as postinfectious encephalitis[13, 23] following mumps, measles and chickenpox, postvaccinal encephalitis,[6, 26] brain and cord tumors and abscesses, metabolic and general vascular disturbances, toxic encephalopathic conditions and miscellaneous conditions such as subacute bacterial endocarditis, ricksettsial involvement of the central nervous system[12] and Guillain-Barre syndrome.

Sometimes the arthropod-borne encephalitides can be differentiated from polioencephalomyelitis, but usually there is much difficulty in distinguishing between them.[3, 4, 11] Until a simple test for identification of the virus of poliomyelitis becomes available, its role as a causative factor in the many cases in which the infecting organism is not identifiable by present means, will remain obscure.[22] Both are likely to occur in the Central Valley of California during the summer and early fall months. In both conditions, onset with headache and fever is common.[25] However, sudden onset, occasionally fulminating, with high temperature usually indicates arthropod-borne encephalitis as the more likely.

Although development of paralysis or bulbar symptoms soon after onset is presumptive of poliomyelitis, it is important to keep in mind that these complications occurred also in laboratory-confirmed cases of encephalitis: Tracheotomy was necessary in five cases of proven encephalitis, four western equine and one St. Louis, in 1952.

TABLE 2.—*Initial diagnosis of diseases ultimately proven by laboratory test to be either western equine or St. Louis encephalitis*

Polioencephalomyelitis	Brain trauma
Bacterial meningitis	Brain abscess
Tuberculous meningitis	Cerebrovascular accident
Mumps encephalitis	Intracranial hemorrhage
Coccidioidal infection	Intracranial neoplasm
Lymphocytic choriomeningitis	Convulsive disorder
Central nervous system syphilis	Cardiac failure
Coxsackie encephalitis	Subacute bacterial endocarditis
Pneumonia	Sydenham's chorea
Otitis media	Diabetic coma

The variegated clinical manifestations in this group of diseases arises from the fact that any of them may affect any portion of the encephalon and myelon. Quong[20] in a study of 18 deaths in proven cases that occurred in a severe epidemic of western equine encephalitis in Manitoba in 1941, described in addition to brain lesions diffuse cord lesions which extended to both anterior and posterior horns.

Sulkin,[24] reporting on histopathologic observations in a fatal case in which the western equine virus was isolated, stated: "The inflammatory reaction was most apparent in the spinal cord, but involved the medulla, pons and midbrain to a striking degree. No inflammatory reaction was evident in the cerebrum, corpus striatum or cerebellum."

In the 1952 outbreak, Huntington,[15] pathologist at Kern General Hospital, observed lesions in the segments of the upper cervical cord in a number of confirmed cases.

In light of these pathologic changes, it is easier to understand the bulbar and lower motor neuron signs that are occasionally observed in the arthropod-borne encephalitides. These may result in flaccid paralysis of single extremities with absence of deep tendon reflexes, signs of involvement of cranial nerves or respiratory distress which may necessitate tracheotomy or the use of a respirator. In one case, there was a unilateral sensory loss over the area of distribution of the ophthalmic branch of the fifth cranial nerve.

DISCUSSION

As has been pointed out by a number of investigators,[7, 8, 17] it is impossible to differentiate western equine from St. Louis encephalitis clinically. Malodorous perspiration in cases of western equine encephalitis noted by Hammon[8] in his report on encephalitis in Yakima was of no differential diagnostic significance in the authors' experience. Final

diagnosis rests with the demonstration of a rise in titer of specific antibodies in the serum of the patient. Reeves[21] reported that 20 per cent of a "normal population" in an endemic area had neutralizing antibodies to St. Louis virus and 10 per cent had evidence of contact with western equine virus. Therefore, a single specimen of blood with neutralizing antibody has little diagnostic significance. Conversely, negative result of a test of a single specimen taken in the acute phase does not rule out the disease. Antibodies may appear at varying time intervals after the beginning of the illness with either western equine or St. Louis encephalitis. At least two specimens of serum are, therefore, necessary in order to show that antibodies have appeared or increased in titer during the course of the illness. The first specimen should be taken as early in the course of the disease as possible; the second, ten days or more after the first. Sometimes it is necessary to obtain a third, fourth or even fifth specimen to establish a diagnosis. Of note is the fact that in 34 of the cases in the 1952 epidemic there was no antibody rise until approximately 35 or more days after onset of illness.

It should be stressed that in addition to the 386 laboratory confirmed cases, there were 198 cases in the category of encephalitis, "etiologic agent not known." No antibody rise could be demonstrated to viruses of western equine or St. Louis encephalitis or mumps in a series of blood specimens. Results of tests, done later, of these negative specimens for antibodies of eastern equine, Japanese B, lymphocytic choriomeningitis and California viruses were also negative. Analysis of clinical signs and symptoms reported in this group shows them to be strikingly comparable to those observed in the "laboratory confirmed" group. This relationship, suggesting that as yet undiscovered etiologic agents may be responsible for the syndrome of encephalitis, has previously been described.[9, 17] Clarification of this problem apparently must await further epidemiologic studies, the development of better serologic tools to assist in establishing a specific etiologic diagnosis and, possibly, on the isolation of new etiologic agents.

In the event of death, postmortem examination is highly desirable, both for histopathological studies and for isolation of etiological agents from the brain and central nervous system tissue. On the basis of observation in the laboratory confirmed cases, it is well to reemphasize the value of the histopathological studies—not only of the brain and upper cervical cord that can be obtained through the foramen magna, but also of the entire cord.

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The 1952 Outbreak of Encephalitis in California

Laboratory Methods for Etiologic Diagnosis

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• The general procedures used in the diagnosis of neurotropic viral diseases are outlined and are discussed with specific reference to western equine encephalitis.

Cerebrospinal fluid is considered practically worthless as a starting material, in attempts to isolate the causal agent. The material of choice in attempting to recover the virus is central nervous system tissue, available only in instances of fatal infection. In the usual case, the diagnosis depends upon serologic or immunologic methods. These methods are aimed at detecting the presence of specific antibodies and of increases in the content of antibodies in the blood during the course of the illness.

The in vitro complement fixation test is considered a better diagnostic tool than the in vivo neutralization test, since rises in titer are more readily detectable by the former technique than by the latter.

THE TERM *infectious encephalitis* is a generic one, covering any encephalitic process resulting from the invasion of a microorganism. The etiologic agents, therefore, are diverse and of many biologic groups —protozoa, fungi, bacteria, rickettsiae and viruses. The similarity of the response of the encephalon to the noxious action of the agents is such, however, that on the basis of the clinical findings alone it is virtually impossible in the preponderance of cases to determine what the inciting agent might be; the assistance of laboratory examination is required.

Since the symposium of which this presentation is a part is concerned with the encephalitis of viral etiology, and specifically encephalitides due to the western equine virus, the present discussion will be limited to this aspect of infectious encephalitis. Referring again to diagnosis, and considering only the viruses, only comparatively seldom is it possible on clinical grounds alone to incriminate a specific member of this group. Thus, in post-infection encephalitides, it is generally assumed that the agent producing the precedent systemic illness is also responsible for the encephalopathic aftermath. (Controversial aspects of the etiology of post-infection encephalitis will not be considered herein.) Adequate inquiry into the patient's epidemiologic background, so frequently neglected, may give valuable leads to the true nature of the infection—for example, a history of recent exposure, in a case of primary mumps encephalitis, to a person who had mumps parotitis.

In the case of the arthropod-borne encephalitides, among which are included those due to the western equine and St. Louis viruses, the index of suspicion is heightened if the patient resides in or has recently traveled in an endemic area, or if an outbreak is occurring. Proof as to the exact identity of the causal agent, however, is something else again. During the past decade, a number of observers have discussed at length the difficulties of differential diagnosis, and Lennette and Longshore[6] summarized the situation two years ago. Kokernot, Shinefield and Longshore[5] now have restated the situation and illustrated the problems of differential diagnosis. All these studies have underlined the value of laboratory aid in reaching a specific etiologic diagnosis, and the unquestioned desirability of definitively determining the identity of the organism causing the disease if epidemiologic and clinical knowledge is to advance.

How are these ends to be reached? Of first importance is the need for close cooperation between clinicians and virologists. Unfortunately, the present situation on the whole leaves something to be desired in this respect. Only too often, to the despair of laboratorians, are materials submitted for examination without the information necessary for intelligent approach to the problem. Certainly, supplying only the name of the patient without any corollary personal, epidemiologic or clinical data, and requesting that accompanying specimens be submitted to "virus studies" is of no help whatever toward solution of the problem presented by this

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all-inclusive request. Lacking the crystal ball of the seer or the necromancer, the laboratorian must either perform a whole battery of useless tests or obtain from the clinician the necessary lacking data. Since the former is so costly in terms of time, labor and reagents as to be prohibitive, the latter is the course almost invariably followed—even though it interposes delays in examination. Brief clinical summaries, of the type supplied with each specimen or set of specimens by physicians of the armed forces and the Veterans Administration, are of great help to laboratorians. On behalf of all laboratorians in general, and of virologists in particular, the authors make a plea that such summaries be supplied wherever possible; failing this, the "specimen history" form of the particular laboratory to which the specimens are to be sent should be completely filled in.

Next in importance is an adequate appreciation of what virologic examinations require in the way of materials for examination, the appropriate time and method of collecting these materials, and the ways of handling between the time of collection and arrival at a laboratory. The basic rules are simple and will be brought out in the appropriate connections as this discussion develops.

The diagnostic approaches available in the virus field can be categorized under three headings: isolation of the causal agent, serologic tests in vitro, and immunologic tests in vivo. These methods are all based on the fundamental principles of bacteriology and immunology, any differences in method being referable to the peculiar properties and characteristics of viruses as compared with bacteria. With this in mind, a brief outline of each approach would seem pertinent at this point. The remarks under the next three headings, although referring specifically to the encephalitides, are essentially applicable to all viral diseases.

Isolation of the causal virus. To weight the balance in favor of success, one must choose the material most likely to contain the virus; collect it at the proper stage of the illness; and subinoculate it into laboratory animals as promptly after collection as possible or, if this cannot be done, keep it frozen at dry ice temperature until subinoculation can be done. These are general principles which, in the case of the encephalitides, require some modification, and an explanation thereof.

Although in instances of central nervous system disturbance of bacterial origin it is possible to recover the organism from the spinal fluid, this material is essentially worthless when dealing with viral agents. The authors have never succeeded in isolating a viral agent from spinal fluid despite the testing of many hundreds of specimens. It is true that viruses have been recovered from spinal fluid, but generally only when the fluid has been injected into laboratory animals under ideal conditions practically within minutes of collection from the patient. Since many viruses are highly labile in what is generally referred to as "room-temperature," it is obvious that exposure to unfavorable temperatures for even relatively short intervals, as during the time required for a specimen to reach its destination through the mails, will result in destruction of the agent. Much of the authors' experience has been with such specimens, in transit anywhere from one to three days, and unprotected from the deleterious effects of heat. However, even in those instances in which spinal fluid has been shipped on dry ice, the experience has been no better. It is not known how such specimens have been treated (or maltreated) before they were shipped in the frozen state, but it has been concluded from experience that, for practical purposes, spinal fluid is not a good material from which to try to isolate a virus.

While the virus of western equine encephalomyelitis has been isolated from the blood, it would appear that the chances for success here are limited, since viremia, if it occurs, does so very early in the disease, usually before the patient seeks medical attention or before the nature of the illness is recognized by the physician. This leaves, in essence, only those tissues which are the site of predilection of the virus—tissues of the central nervous system —as the material from which the virus can be recovered. Obviously, this applies only to cases in which the patient dies. Even with such presumably auspicious starting material, the virus cannot always be isolated. If the infection is a fulminating one, and death occurs early, the virus may be expected to be present in concentrations that, if not actually high, are at least detectable. As the duration of the illness lengthens, the chances for recovery of a virus diminish progressively and eventually, if sufficient time elapses, become nil. It is apparent, therefore, that failure to recover a virus is of no diagnostic value—that is, a "negative" result is not conclusive that a virus was not present.

In excising central nervous system material for virus isolation procedures, portions of several representative areas should be taken. These should be placed individually into separate containers, frozen at once, and sent to the laboratory on dry ice. As the material is to be injected into laboratory animals, great care should be taken against bacterial contamination. Unfortunately, the brain is seldom removed with aseptic precautions, which in itself gives rise to difficulties when such contaminated tissues are injected into the cranial cavity of the test animal, and the difficulties are compounded or

made insurmountable if the specimen is removed by hands which have just opened the intestinal tract.

It is highly desirable that a specimen of blood be obtained at the time material is taken from the central nervous system. This serves a dual purpose. If the interval between the onset of illness and death has been long enough to give the defensive mechanisms of the body an opportunity to come into operation, humoral antibodies may have appeared. Consequently, the postmortem blood specimen, especially if tested in conjunction with a specimen taken earlier in the illness (vide infra), may be useful either in establishing a diagnosis or to show that the agent recovered from the patient is related to the illness, and is not an extraneous one.

Serologic tests. These are best exemplified by the complement-fixation technique, which has been used for some years. The earlier procedures, while highly useful in experienced hands, were fraught with difficulties and, to the unwary or to the novice, with danger because of the troublesome non-specific effects and because of the very low antibody titers detectable with the comparatively insensitive antigens. These problems were associated with the crudeness of the antigen preparations which were, in essence, raw suspensions of infected mouse brain, subjected to several cycles of freezing and thawing to precipitate out some of the factors giving rise to non-specific fixation.[1] Within recent years these mouse brain antigens have been considerably improved by extraction of the material, either in the aqueous phase or in the lypholized state, with lipid solvents to remove the undesirable fractions.[3, 4] The authors find these extracted antigens satisfactory and employ them routinely except where (in their experience) antigens derived from infected embryonated hens' eggs have proved to be superior, or at least as good. Thus, since the St. Louis virus does not multiply to a sufficiently high concentration in the embryonated egg to give a good starting material, an extracted mouse brain antigen is used. But since the western equine encephalomyelitis virus, in contrast, grows to as high a titre in the egg as in the mouse, complement-fixation antigen used in tests for that virus is prepared from infected egg materials. The virus strain used is one originally isolated, in embryonated eggs, from the brain of a horse. It produces an excellent antigen. The egg membranes and fluids are used, and non-specific factors are removed from the preparation by high speed centrifugation.

Sabin and co-workers,[2, 7] through a series of painstaking investigations, recently developed a hemagglutination-inhibition test for the western equine and St. Louis viruses. The procedure is rather complicated and demands exacting control at every step, but promises to be a highly useful investigative and diagnostic tool. The authors have had so little experience with this procedure that they cannot make any evaluations at present. The following remarks, however, are as pertinent to the use of the hemagglutination-inhibition method as to the complement-fixation method.

In any method whose primary purpose is to detect antibodies, a single determination has little or no value from a diagnostic standpoint. The objective in diagnostic work is to determine whether, during the course of illness, specific antibodies develop in the patient, or whether, if antibodies are already present early in the illness, they rise to a significantly greater level. Hence at least two specimens of blood are necessary for examination, one taken as soon as possible after the onset of the illness, the other some days later. Results obtained in tests of the first specimen serve as a base line against which the results obtained with subsequent specimens are compared and interpreted. The need for a base line becomes obvious if it is recalled that many persons living in endemic areas have antibodies to western equine encephalomyelitis virus which were acquired through inapparent, or subclinical, infections. Through stimuli provided by repeated exposures, these antibodies may persist for relatively long periods. To make a diagnosis of encephalitis in an ill person on the basis of an antibody determination conducted on a single specimen of blood taken during the acute phase of illness obviously is not permissible. The basic operating principle, then, is the examination of at least two, sometimes more, specimens, the interval between withdrawal of them being of sufficient length (seven to ten days) to permit development of detectable increases in antibody level.

Immunologic tests. The so-called neutralization test, as the name implies, determines the ability of the serum under examination to neutralize the lethal effects of the virus. The test is performed by adding some of the serum to each of a series of tubes containing virus in decreasing amounts. Each of the serum-virus mixtures thus obtained is injected into mice and the animals are kept under observation for 10 to 14 days. If the serum contains specific antibody, the virus, unless excessive amounts are present in the mixture, is neutralized, and the animals survive. Conversely, if antibody is absent, the virus is unaffected, and kills the animals. If the serum contains only small amounts of antibody, only small amounts of virus are neutralized, and consequently, only those animals receiving mixtures containing minimal doses of virus survive. If large amounts of antibody are present, correspondingly larger doses of virus are neutralized, which is manifested by the

TABLE 1.—*Clinical conditions suspected, as stated on forms accompanying blood specimens to laboratory*

1. Arthropod-borne encephalitis
2. Coxsackie encephalitis
3. Meningitis
4. Meningitis, encephalitis
5. Mumps encephalitis
6. Neurotropic virus infection
7. Poliomyelitis
8. Poliomyelitis or encephalitis
9. Respiratory disease with encephalitis
10. Rickettsiosis with encephalitis
11. Viral encephalitis
12. Western equine encephalitis

survival of animals that received test mixtures containing increasingly larger amounts of virus. From the number of animals dying or surviving in the test, the neutralizing capacity of the serum can be computed and expressed as a number.

Since neutralizing antibodies, unlike complement-fixing antibodies, persist for years, the need for examining multiple specimens of the patient's blood is even greater; the mere presence of antibody is without significance, and a rise in titer must be demonstrable before a laboratory diagnosis can be made.

All specimens of blood should be taken with aseptic precautions, and put into a sterile container, since bacterial contamination not only renders the serum unfit for serologic tests, but also precludes its use in neutralization tests. Anticoagulants and preservatives should not be used, and freezing of whole blood must be avoided, as laked blood cannot be used in serologic tests. Whole blood should be shipped without refrigeration. (See details of method in adjoining column.)

Collection of Blood Specimens for Serologic Tests for Encephalitis

1. Obtain 10 to 20 ml. of venous blood as soon as there is clinical suspicion of encephalitis. (The specimen should be taken as soon as possible after the onset of illness.)
2. Ten to 14 days later, obtain a second 10 to 20 ml. specimen of blood. (This is the recovery-phase or convalescent-phase specimen.)
3. Send each specimen to a virus laboratory immediately after it is obtained.

Procedure for Taking and Shipping Specimens

1. Blood should be taken with a *dry* sterile syringe and needle. Do not use anticoagulants.
2. Put the specimen into *sterile* tubes closed with sterile rubber or cork stoppers. Use *aseptic precautions* throughout. Do not add preservatives to the blood.
3. Be sure tubes are tightly stoppered for shipment. Do not ship tubes closed with cotton plugs.
4. Virus laboratories supply mailing containers and sterile specimen tubes on request. Also supplied with these is a "specimen history" form. This must be completely filled in and submitted with the specimen. Inadequate information will delay testing of your material.
5. Mail specimens and history to virus laboratory. Two laboratories in California offer diagnostic facilities:

CALIFORNIA STATE DEPARTMENT OF PUBLIC HEALTH
Viral and Rickettsial Disease Laboratory, 1392 University Avenue, Berkeley 2 (BErkeley 7-3712)

and

CITY OF LOS ANGELES DEPARTMENT OF HEALTH
Viral and Rickettsial Disease Laboratory, 10975 Wilshire Boulevard, Los Angeles 24, (ARizona 8-2016)

EXPERIENCES DURING THE 1952 OUTBREAK

Early in the summer of 1952, several factors suggested that an unusual incidence of encephalitis in California might be in the offing: The number of cases of encephalitis being reported by physicians was higher than in the corresponding periods of past years, the number of specimens being received by the laboratory from patients with disturbances of the central nervous system was higher, and the proportion of cases in which results of laboratory examination were positive for encephalitides was unusually high.

The clinical impressions, as reported on the "specimen history" forms submitted with specimens sent to the laboratory, covered a rather wide spectrum but the preponderance fell into the designations listed in Table 1. In virtually all the cases of laboratory-proved western equine encephalitis, the clinical impression was of one or another of the 12 conditions listed. Since there is no simple, practical diagnostic test for poliomyelitis, it appears that many of the specimens submitted from patients on whom the clinical impression was given as poliomyelitis were sent in primarily to rule out infection with the arthropod-borne encephalitis viruses. As awareness of the outbreak increased, increasingly larger numbers of specimens were submitted from patients considered to have "viral encephalitis" or western equine encephalitis. The large number of laboratory-proved cases of western equine encephalitis was owing in part to the cooperation of physicians who, interested in obtaining a definitive diagnosis, sent in the large amount of material that was examined; and in part to the practice of this laboratory of applying a battery of tests to all specimens sent in from patients with clinical evidence of a central nervous system disturbance (all blood specimens are routinely tested against the viruses of western

equine encephalomyelitis, St. Louis encephalitis, lymphocytic choriomeningitis, herpes simplex, and mumps).

Material from more than 1,500 patients was examined during the summer months, and infection with western equine virus was proved in 370 cases and with the St. Louis virus in 44 cases. In 356 of the 370 cases of western equine encephalitis the diagnosis was made by the complement fixation method, in nine by the neutralization test and in five by isolation of the virus from specimens of the central nervous system (see Table 2). (In addition to the cases of western equine and St. Louis encephalitis, there were a number of cases in which encephalitis was proved to be caused by the mumps virus, and two cases in which the herpes simplex virus was found to be the infecting organism.)

Perusal of part of the large amount of laboratory data accumulated during the 1952 experience raised some provocative questions and suggested answers to certain aspects of infection with the western equine encephalomyelitis virus. Since many laboratory results are being rechecked and additional work is being done, and since final collation and statistical evaluation of the data has yet to be done, some of the following generalizations should be accepted with the understanding that they represent only tentative conclusions or indicate trends; the definitive findings will be published later as final evaluation of the pertinent data is reached.

Table 2 present a comparison of the results obtained by the complement fixation and neutralization methods for western equine encephalitis; only data on cases in which a diagnosis could be made by one or the other method are given. Considering first the complement fixation test, it will be seen that by this method a laboratory diagnosis was made in 356 cases. In the preponderance of cases, the diagnosis was made on the basis of a four-fold or greater rise in antibody titer between the blood taken in the acute phase and a specimen or specimens taken in the recovery or convalescent phase. In 257 cases, the titer of the acute phase serum was less than 1:8 —that is, "negative"—and subsequently rose to at least 1:16 (four-fold) and usually higher (as high as 1:256 or greater). In other cases the initial titers were 1:8 or higher and later rose to at least four times higher, the minimal increase considered diagnostically significant; and in a few cases the diagnosis was based on the presence in the serum of high levels of complement-fixing antibody. The crude data available indicate that, in general, the longer the interval between onset of illness and the drawing of the first specimen of blood, the higher the titer. In some instances the fact that there was no rise in titer between the first and subsequent specimens was owing to the fact that the antibody concentration had already reached its maximal level by the time the first specimen was taken. However, in some persons complement-fixing antibody may be slow in developing or appearing; in several cases there was no rise in titer until after a number of specimens of blood, taken at intervals during the illness and the recovery phase, had been tested.

TABLE 2.—*Comparison of results obtained by the complement fixation and neutralization tests for western equine encephalomyelitis*

Results of complement-fixation tests	Results of neutralization tests			
	Positive	I or N*	No test	Totals
Positive	64	277	15	356
I or N	9			9
Totals	73	277	15	365†

* I or N = Inconclusive or Negative.

† Diagnosis in five additional cases made by isolation of virus from central nervous system.

From the diagnostic standpoint, it is of value to know how long complement-fixing antibodies persist after illness. If they disappear rapidly, especially between one encephalitis season and the next, the mere presence of antibodies in the blood might serve as evidence of recent infection. Studies are currently in progress to determine how long and at what levels complement-fixing antibodies to the western equine virus persist. Antibody determinations have been made on a number of persons six to nine months after illness, and the results apparently indicate differences in antibody persistence between infants and persons beyond infancy. The antibody levels in children who were one year or less of age at the time of illness tend to persist at the original level up to at least seven months; in persons older than that, however, the levels at the time of last testing, some seven months after the acute phase of disease, appeared to be declining rather quickly, and in some persons antibody was no longer demonstrable.

As is noted in Table 2, in only nine cases was diagnosis made on the basis of the neutralization test alone. In those cases, the results of complement fixation tests were negative, or the titer of fixation was so low that it was regarded as non-specific, or the test could not be done because the specimens of serum were strongly anticomplementary. In 64 cases the results of the complement fixation test and the neutralization test were in agreement, in that the findings by either method could be interpreted as evidence of western equine virus infection. In 277 other cases, however, the results of the neutralization test had to be regarded as negative or inconclusive, although a diagnosis of western equine encephalitis was made in all those cases by means of the complement fixation technique.

As was previously noted, the neutralization test consists of determining the capacity of acute phase

serum, and then of recovery or convalescent phase serum to neutralize the lethal effect of the virus for animals (mice). Each specimen of serum is tested against graded doses of virus, so that the amount of antibody present in each specimen can be determined in terms of the quantity (number of lethal doses) of virus neutralized. Since, during the course of a patient's illness, specific antibodies are expected to appear or, if already present at the time the first specimen was obtained, to rise in titer subsequently, a significant rise in neutralizing antibody titer would provide a laboratory diagnosis. The neutralizing capacity of serum is indicated in terms of the number of lethal doses (50 per cent end-point) neutralized. That capacity is expressed as an arithmetic or a logarithmic number. The difference between the neutralizing capacity of acute phase serum and that of convalescent phase serum is referred to as the "neutralization index." There is some division of opinion as to what constitutes a significant neutralization index, but since the virus dilutions used in the tests are prepared in 10-fold steps, a possible variation of one 10-fold dilution in the test results is generally regarded as within the possibility of error in the test. Consequently, a neutralization index of 1.0 logarithm, representing a 10-fold rise in titer, is considered not significant. The authors have taken a neutralization index of 1.5, or a 30-fold increase, as representing the minimal difference in titer between an acute and a convalescent phase specimen that can be regarded as diagnostically significant. This comprises a very small change in titer, yet on the basis of this criterion it was necessary to relegate the results in 277 cases (that were "positive" by complement fixation methods) into the negative or inconclusive category so far as the neutralization test was concerned. The difficulty lay not in demonstrating that the patients had neutralizing antibodies, since all did, and many had sera with capacity to neutralize 1,000 or even 10,000 lethal doses, but in showing that the difference in neutralizing capacity between acute and convalescent sera amounted to 1.5 logs or more. The crux of the difficulty resides in the fact that, if these persons can be considered as representative of patients with western equine encephalitis who seek medical attention, in the great majority (277 of 341, or 81 per cent, in this series) neutralizing antibodies not only are present by the time the first specimen of blood is taken, but have already reached their maximal level. Since in a high proportion of cases the first blood specimens were taken within only a few days after the onset of the illness, it appears that neutralizing antibody is formed rapidly, and perhaps may be appearing even before the advent of clinical symptoms. Whatever the situation may prove to be, the present experience indicates that under conditions of every-day practice, neutralizing antibodies are already present in high concentration by the time the first specimen of blood is taken for examination, whereas little or no complement-fixing antibody is present. Consequently, the authors are inclined to favor strongly the complement fixation method over the neutralization test as a diagnostic tool for western equine encephalitis, and in the future plan to rely on it as the basic diagnostic method. This attitude is without prejudice to the hemagglutination-inhibition technique, which is relatively new and whose applicability to practical, large-scale diagnostic work has yet to be assessed.

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The 1952 Outbreak of Encephalitis in California

Epidemiologic Aspects

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• *For the most part, epidemiologic phenomena observed in the outbreak of encephalitis in 1952 accorded with patterns that had been apparent in previous years. Ninety-seven per cent of the 414 laboratory-confirmed cases of western equine and St. Louis encephalitis in humans occurred in the 20 Central Valley counties. The cases of western equine encephalomyelitis in horses were generally scattered over the state. In the Central Valley most of the cases in horses were in animals less than two years of age; elsewhere the incidence was higher in older horses.*

There were no laboratory-confirmed cases of western equine or St. Louis encephalitis in humans earlier than June or later than October.

In 1952 there were far more cases of western equine than of St. Louis encephalitis—a departure from the pattern in the previous seven years when there were about as many of one as of the other. No known satisfactory index is available for the prediction of the extent or type of outbreaks in humans.

Approximately one-third of the cases of western equine encephalitis were in patients less than one year of age, whereas there were no cases of the St. Louis disease in patients that young.

The incidence of western equine encephalitis in persons under 5 years of age was about the same for girls as for boys. In higher age brackets, males with western equine encephalitis outnumbered females 2 to 1. The corresponding ratio for St. Louis encephalitis was only 1.2 to 1.

CALIFORNIA EXPERIENCE with western equine and St. Louis encephalitis in man for the period 1945-1950 has been set forth in some detail by Lennette and Longshore,[4] and a general description of the 1952 outbreak has likewise appeared in print.[2] The purpose of this presentation is to touch on some of the epidemiologic highlights of the 1952 epidemic. It will not attempt to discuss either the environmental and climatic conditions, which were in a large measure responsible for the unusually heavy incidence in 1952, or the measures taken to control the outbreak. These factors and aspects are covered by Stead and Peters.[8]

The rather extensive epidemiologic data available for analysis were made possible by the assistance rendered by personnel assigned to California by the Communicable Disease Center of the United States Public Health Service, and through the cooperation of local health agencies and practicing physicians in the affected areas of the state.

The 1952 incidence of 805 cases of encephalitis in humans was the highest ever known in California. The total number of infectious encephalitis cases considered to be in the outbreak, and reported during the period June through October, was 792. Of these, 370 were confirmed by laboratory procedures as western equine encephalomyelitis and 44 as St. Louis encephalitis, making a total of 414 laboratory-confirmed cases (see Lennette and coworkers[5]). In 1950, the year of second highest incidence, the total number of cases was 357 of which 157 were confirmed; and in 1945, when the incidence was third highest, 54 of the 302 reported cases were laboratory-confirmed.

During the period May through November 1952, there were 407 cases of encephalitis in horses reported. Although the laboratory received specimens in relatively fewer of the cases in horses than of the cases in humans, 73 of the 407 were confirmed as western equine encephalomyelitis, and these occurred from June through September.

From the Bureau of Acute Communicable Diseases, California State Department of Public Health, Berkeley.

Part of a Symposium on Encephalitis presented by the Section on Public Health at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24 to 28, 1953.

GEOGRAPHIC DISTRIBUTION

Figure 1 shows the geographic distribution by county of the 805 cases of infectious encephalitis reported in 39 of the 58 California counties in the calendar year 1952. Figure 2 shows the areas report-



Figure 1

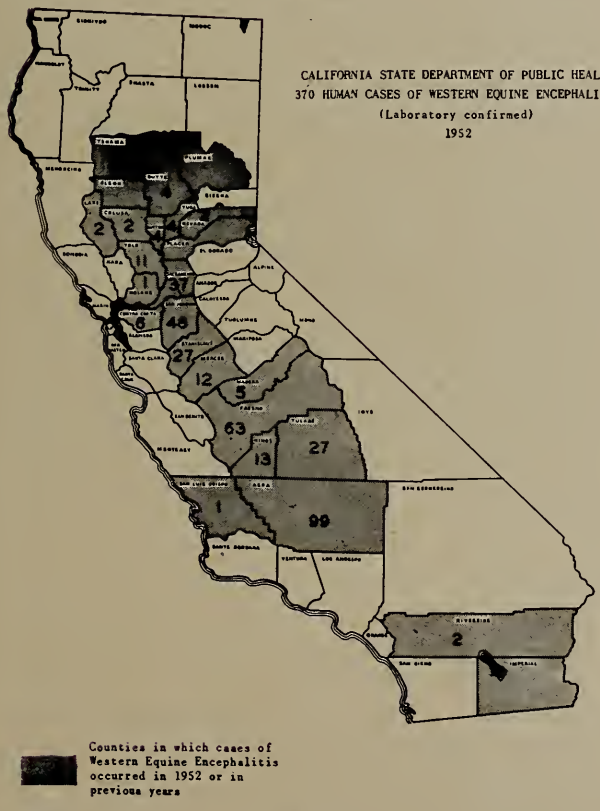


Figure 2

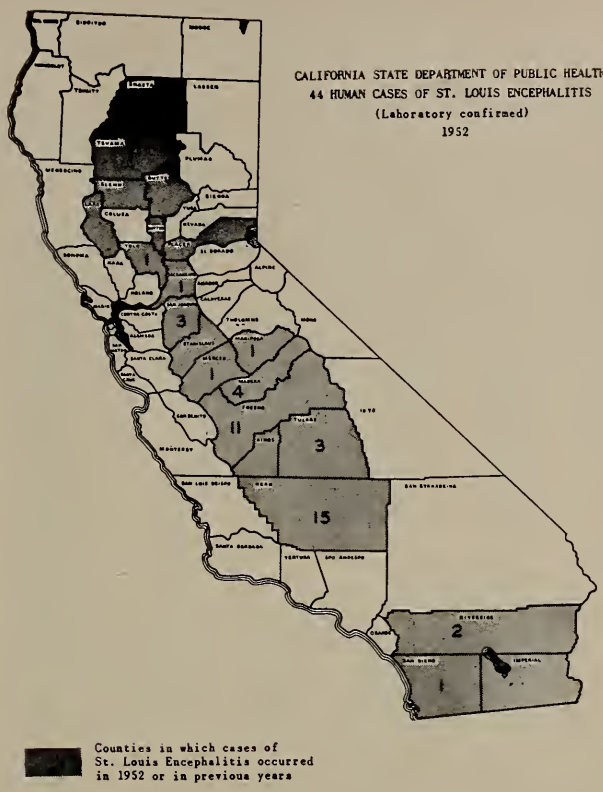


Figure 3

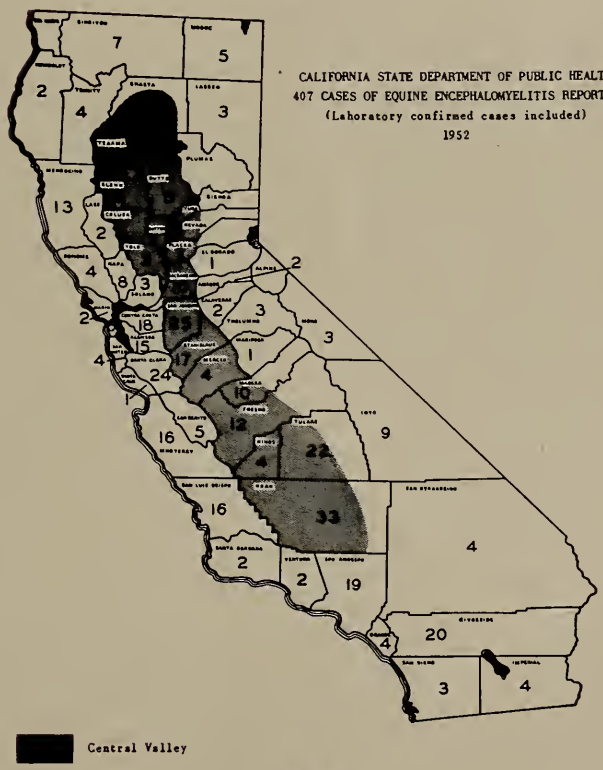


Figure 4

ing confirmed western equine encephalitis and Figure 3 those reporting confirmed St. Louis encephalitis. Twenty-three counties, predominantly those in the Central Valley, had laboratory-confirmed cases: 11 counties had western equine cases only, three St. Louis only, and nine had both types. Four counties had confirmed cases of western equine for the first time while three counties had their first confirmed cases of St. Louis encephalitis. Five of the counties in which cases were reported had not had any confirmed cases until 1952. These were: Mariposa, Nevada, Contra Costa, San Luis Obispo, and San Diego.

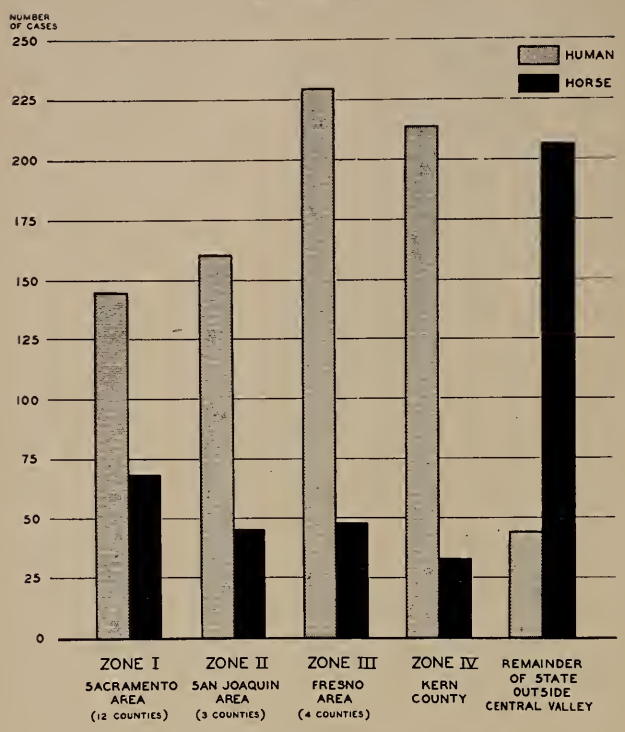


CHART 1

The pronounced differences in the ratio of cases in humans to cases in horses in the valley and in the "fringe areas" are shown in Figure 4 and Chart I. The major difference noted in the distribution of the human and the horse cases was that the majority of the human cases were rather definitely limited to the Central Valley area whereas the horse cases were generally scattered throughout the state. During the 1952 epidemic, approximately as many cases of encephalitis in horses were reported in some of the so-called "fringe counties" as in the endemic areas. This may have been due to the possibility that a large percentage of the horses in the endemic areas either had immunity due to exposure in previous years or had been vaccinated, whereas in the "fringe areas" a higher percentage of the horses were probably susceptible and vaccination in those areas was not started until actual cases were reported. In the endemic areas, most of the cases occurred among horses up to two years of age while those that occurred in the "fringe areas" were in older horses, suggesting that the older animals in the endemic areas had been exposed and had developed immunity whereas those in the "fringe areas" had not been exposed previously and were not immune.

The disease in horses follows an epidemiologic pattern similar to that in man. Very rarely does more than one case occur on any one ranch although there may be 10 to 20 other horses there. The cases occur sporadically and at widely scattered places.

TABLE 1.—*Reported human and equine cases of infectious encephalitis—month of onset by geographic zone of exposure—California, May-October 1952*

	Total	May	June	July	Aug.	Sept.	Oct.
Total							
Human	797	5	43	329	296	96	28
Horse	406	4	100	160	118	16	8
Zone I							
Human	146	..	1	39	87	15	4
Horse	70	2	53	15			
Zone II							
Human	160	..	4	70	72	12	2
Horse	46	..	2	35	8		1
Zone III							
Human	230	..	9	105	75	32	9
Horse	48	..	10	27	10		1
Zone IV							
Human	217	3	28	104	42	30	10
Horse	33	..	22	6	5		
Fringe Counties							
Human	44	2	1	11	20	7	3
Horse	209	2	13	77	95	16	6

Zone I—Sacramento area (12 counties).
Zone II—San Joaquin area (3 counties).
Zone III—Fresno area (4 counties).
Zone IV—Kern County.
Fringe counties—remainder of State outside Central Valley.

The transmission of the virus from horse to horse, horse to human, or human to horse has not been established. It has been stated that the usual sequence is that horse cases will occur one to three weeks before the onset of cases occurring in humans (see Table 1). This relationship has not been found to be uniformly true in California since in some instances human cases are reported first, while in others cases have been reported in both humans and horses at approximately the same time, with no definite pattern established. Usually the horse cases occur early in the southern area and then extend northward as the summer progresses; however, this is not always the pattern, as cases have been reported as far north as Tehama County earlier than in the southern San Joaquin Valley counties. In 1952, a large number of horse cases were reported in Riverside County late in August when horse cases were receding in the San Joaquin Valley.

An experimental study developed from the opinion held by many investigators that a horse ill with western equine encephalomyelitis is a hazard to humans in his vicinity. This study[1] showed that a horse inoculated with the western equine virus developed viremia as early as 24 hours after inoculation and in some cases the viremia lasted up to five days. Approximately seven to nine days after the horse was inoculated and four days after viremia was no longer present, rises in temperature were noted and about the tenth or eleventh day the horse became clinically ill. The fifth day following inoculation, the virus could be found only in the brain tissue. This indicated that the infected horse did not present any hazard to people or to other

horses after the appearance of the signs of clinical illness. It also demonstrated that since the viremia lasted up to five days, mosquitoes theoretically could bite the horses during this five-day period and in turn possibly transmit the disease to other horses or humans. This point is far from completely settled.

In a serologic survey approximately 30 to 40 per cent of the horses two years of age or older in the San Joaquin Valley showed evidence of St. Louis antibodies. Despite efforts over a period of years, no one has found a horse under natural conditions with clinical illness due to the St. Louis virus. Therefore, until proven otherwise, it is believed that under natural conditions the St. Louis virus does not cause clinical illness in horses.

There is no clear-cut explanation of the difference in the geographic distribution of human and horse cases, although several hypotheses have been put forth. One possibility is that, since high mean temperatures such as those in the Valley areas apparently are necessary for the development of the virus and its multiplication in mosquitoes, mosquitoes in coastal counties and other areas where high temperatures are not maintained would usually be noninfective. Another hypothesis postulates the presence of a non-mosquito vector that has a preference for horses and that could transmit the disease to horses in the "fringe areas," whereas within the Valley the mosquito species is the primary vector for both man and horse. However, adequate epidemiologic study of outbreaks among horses in the "fringe areas" may confirm the suspicion that most of the cases among the horses in these outer areas are in small valleys where the climatic conditions and mosquito prevalence fit the Central Valley pattern but neither the surrounding mosquito vector reservoirs nor human population provide sufficient exposures to give rise to cases in humans.[7]

TABLE 2.—*Cases of infectious encephalitis reported by counties and zones—California, 1952*

County	1950 Population	Total Cases—Number	Total Cases—Rate
California, Total	10,586,225	805	7.6
Central Valley, Total	2,097,204	758	36.1
Zone I:			
Butte	64,930	9	13.9
Colusa	11,651	2	*
Glenn	15,448	1	*
Placer	41,649	4	*
Sacramento	277,140	65	23.4
Shasta	36,413		
Solano	104,833	8	7.6
Sutter	26,239	16	61.0
Tehama	19,276	1	*
Yolo	40,640	20	49.2
Yuba	24,420	11	45.0
Total, Zone I	662,639	137	20.7
Zone II:			
Contra Costa	298,984	14	4.7
Merced	69,780	26	37.2
San Joaquin	200,750	92	45.8
Stanislaus	127,231	42	33.0
Total, Zone II	696,745	174	25.0
Zone III:			
Fresno	267,515	138	51.6
Kings	46,768	22	47.0
Madera	36,964	21	56.8
Tulare	149,264	44	29.5
Total, Zone III	509,511	225	44.2
Zone IV:			
Kern	228,309	222	97.2

* Number of cases too small for rate computations.
Note: Rates per 100,000 population (1950 Census).

INCIDENCE

When the rate of incidence in humans is calculated for the Valley counties in the four zones, it is evident that the highest rate was in Zone IV (Kern County) where it was 97 per 100,000 population. Second was Zone III (Fresno, Kings, Madera and Tulare counties) where the rate was 44 per 100,000. In Zone II (San Joaquin, Merced, Stanislaus and including Contra Costa County) it was 25 per 100,000, and in Zone I (Butte, Colusa, Glenn, Placer, Sacramento, Shasta, Solano, Sutter, Tehama, Yolo and Yuba) it was only 20 per 100,000. Zones I, II and III are about equal in population, while the population of Zone IV is about one-third that of the other zones. If counties in the zones are considered individually, more variation in population, in number of cases and in rate of incidence is noted, as shown in Table 2.

The rate of incidence of encephalitis in infants less than one year of age varied considerably from zone to zone: It was 102 per 100,000 in Zone I, 290 in Zone III, 377 in Zone IV and 406 in Zone II. In all zones the rate of incidence in infants was higher than in persons of any other age group.

Even though large numbers of horses are vaccinated each year, which should bring about a reduction of the proportion susceptible to the disease, the rate of incidence was much higher in horses than in humans. This may be explained on the basis that horses are either more susceptible to the disease or that they have a greater exposure both as to the number of vectors and the area of unprotected skin. The incidence in California in 1952 was 384 per 100,000 horses (estimated).

SEASONAL PATTERN

The seasonal pattern of incidence in both humans and horses was essentially the same in 1952 as that observed in the preceding ten years. The incidence of western equine encephalitis in humans for the

state as a whole ranged from below ten cases a week for the first three weeks of June to a peak of over 100 cases a week in July, then receded to fewer than ten cases a week following the second week in October.

Fifty-three per cent of the western equine cases occurred in July, 60 per cent of the total for the year having occurred by the end of that month—this before any emergency mosquito control measures were put into effect. Ninety-four per cent of the western equine cases had occurred by the end of August, whereas only 20 per cent of the St. Louis cases had occurred up to that time. Fifty-two per cent of the St. Louis cases occurred in September.

Although specimens from patients with the encephalitis syndrome are tested at the laboratory at all times of the year, laboratory-confirmed cases of either type have not been recognized outside this June through October period of activity (with the exception in 1952 of an equivocal case with onset November 15).

The horse cases followed the same general seasonal pattern. The peak for the state as a whole was 160 cases, in July. In the Sacramento area and the Kern area the peak was recorded during June.

Once again the difference in seasonal pattern between western equine and St. Louis encephalitis in humans was noted. The first cases of laboratory-confirmed western equine had onset in June. The incidence reached a peak in July, decreased slightly in August and sharply in September. Confirmed cases of St. Louis type began in July; the peak was reached in September and there were a few scattered cases in October.

The ratio of cases of the western confirmed to St. Louis confirmed alternated irregularly during the eight years 1945-1952. In four of the years there were more western equine than St. Louis cases, and in the other four the converse, with no pattern of either sequence or alternation. Hence there is no basis for prediction as to which virus will predominate. Until 1952 there were no great differences between the number of western and the number of St. Louis cases in any year except 1947 when the ratio was 5 to 1.[4] In 1952, however, the ratio of confirmed cases of western equine to confirmed cases of St. Louis encephalitis was about 8 to 1. Also it should be noted that the number of confirmed cases of St. Louis encephalitis in 1952 was the second highest in the last eight years, the total of 44 cases comparing with the record high of 69 cases in 1950. This raises question as to whether mosquito control measures begun in August of 1952, specifically directed toward the Culex tarsalis mosquito, might not have reduced the number of vectors too late to have much effect on the outbreak of western equine encephalitis but soon enough, in

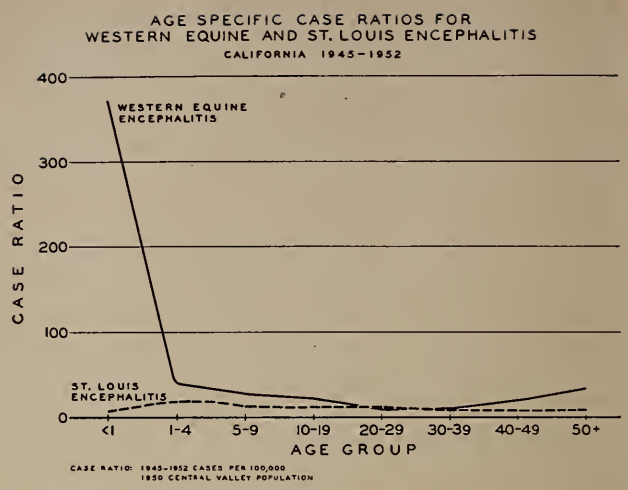


CHART 2

light of the difference in seasonal incidence, to hold the number of cases of the St. Louis disease to less than it might have been. In other words, without the control measures, would the incidence of St. Louis encephalitis and western equine encephalitis have been about equal, as in preceding years?

Upon analysis of another facet of seasonal data for 1952, it was noted that the peak of incidence of western equine encephalitis in humans occurred earliest in the southern part of the Central Valley, later in the mid-central and then in the northern central portions of the Valley. In 1952 for the first time cases occurred in sufficient numbers to demonstrate this phenomenon. This progression northward is probably owing to progression of climatic changes, not to a migration of infected mosquitoes or a movement of infected persons up the Valley.

AGE DISTRIBUTION

In all areas in which western equine encephalitis occurred, the incidence was far higher in infants less than one year of age than in any other age group (Chart 2). Approximately one-third of all patients were in that age bracket, and 94 per cent of those in that group were under seven months of age.

In 1952 there were no cases of St. Louis encephalitis in persons less than a year of age; and of the 213 confirmed cases of the disease in California in the eight years 1945-1952, only three (1.4 per cent) were in patients in that age bracket, whereas 29 per cent of all cases of western equine encephalitis were in the lowest age group. Studies are under way to explore the possibility that (1) antibodies for the St. Louis virus are more effectively transmitted from mother to fetus than are western equine antibodies, or that (2) many more mothers are immune to St. Louis than to the western equine virus.

SEX AND RACE

Of the 792 cases of infectious encephalitis reported in the period June through October 1952,

TABLE 3.—*Results of tests to determine number of subclinical cases of St. Louis or western equine infection in members of family of patient with disease*

	No. Persons Tested	Laboratory Results		
		Negative	Antibodies Present*	Unsatisfactory Tests
Zone I, Sacramento area (12 counties)	259	248	10	1
Zone II, San Joaquin area (3 counties)	361	342	9	10
Zone III, Fresno area (4 counties)	10	9	1	
Zone IV, Kern County	55	53		2
"Fringe" counties outside Central Valley	4	3	1	
Total	689	655	21	13

* For western equine. In no instance was there laboratory evidence of St. Louis virus antibodies.

535 were in males and 257 in females, a ratio of about two to one. This difference, previously observed, has been attributed by many investigators to the greater occupational hazards and exposure of males. In laboratory-confirmed cases of western equine encephalitis the ratio was about the same as for all cases of encephalitis reported—there were about twice as many male as female patients—but in the smaller series of confirmed cases of St. Louis encephalitis the ratio of males to females was only 1.2:1.

In the western equine infections, the difference in incidence by sex was pronounced in persons 5 years of age and older, but there was little if any difference in children under 5 years old. Of 31 patients in the 5 to 9 age group with proved western equine infection, 27 were boys and 4 girls—a disparity that can hardly be explained as owing to occupational factors.

Of the 792 cases reported, 708 were in white persons, 53 in non-whites and 31 in persons whose race was not reported.

SPECIAL SURVEYS

An attempt was made to determine the number of subclinical cases occurring in the family of a person with a proved case. Specimens of blood were taken from all persons in the same household with patients who had proved cases of either St. Louis or western equine encephalitis and the specimens were tested for the presence of antibodies which might indicate recent or previous infection with either of the viruses. The results (Table 3) may be interpreted to indicate that multiple clinical cases in a family are unusual even though members of the family other than the patient rarely exhibit antibodies in their blood.

Specimens of blood were submitted for laboratory tests in 91 per cent of the cases reported as encephalitis. But since there were many cases of clinical encephalitis in which laboratory tests for the etiologic agent were negative, there seems to be reason for strong surmise that viruses as yet unrecognized produce this familiar syndrome. The observation of some patients who had clinical symptoms typical of encephalitis but who had negative results of serology at the usual 10 to 14 day interval, brought about a special study of blood specimens obtained over a longer period. Additional cases were confirmed in the older age groups by this procedure.[3, 6]

At present, not often is suspicion of encephalitis aroused unless there are symptoms of central nervous system involvement. However, at two hospitals effort was made to get specimens of blood from all persons entering with fever; and in two cases in which the only symptom besides fever was diarrhea, serologic tests showed significant titer rises for the western equine virus. While the series on which the study was made was small, the results gave some cause for considering extension of the scope of suspicion to include symptoms other than those referable to the central nervous system. Further studies are indicated.

FATAL CASES

Of the 805 patients with reported infectious encephalitis in 1952, 52 died, a case fatality rate of 6.4 per cent. This compares very favorably with fatality rates in previous years when the number of cases was much smaller: 8.3 per cent in 1951, 8.9 per cent in 1950, 20.0 in 1949 and 42.3 in 1948. The 52 deaths in 1952 were, after investigation, ascribed to encephalitis, but in many instances the etiologic agent was not determined. The decline in case fatality rate may be the result of a combination of improved supportive therapy, better case finding, and changes in death recording.

Autopsy was carried out in 36 of the 52 fatal cases in 1952. In only 14 cases were specimens of the brain submitted to the Virus Laboratory in Berkeley. Western equine encephalitis virus was isolated from 5 of the 14, and 9 were reported as negative for western and St. Louis viruses. (Herpes virus was isolated from two and Coccidioides immitis from one of the specimens that were negative for the St. Louis and western equine viruses.)

Emphasis is needed on the desirability of submitting adequate autopsy specimens for viral tests.

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The 1952 Outbreak of Encephalitis in California

Vector Control Aspects

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• The emergency vector control measures used during the summer of 1952 were designed to supplement the normal mosquito control programs of mosquito abatement districts. The emergency measures were aimed at destruction of adult vector mosquitoes in populated areas as contrasted to normal programs which consist of elimination of breeding places or destruction of the aquatic stages of mosquitoes.

Experience during 1952 clearly demonstrated the limitations of present techniques for coping with adult mosquitoes and pointed up the need for better understanding of the factors controlling survival of Culex tarsalis over the winter months, as well as the need for better methods of measuring the prospect of a large number of infected vector mosquitoes early enough in the year to permit the establishment of preventive rather than palliative measures.

To FULLY APPRECIATE the task of planning and carrying out emergency vector control measures to cope with the 1952 outbreak of viral encephalitis in California, one must consider the actual situation which confronted us and the choices that had to be made quickly without benefit of previous similar experience.

Concerning the disease, these four simple things were known with reasonable certainty: (1) It is caused by one or both of two known viruses. (2) The source or reservoir of the virus in nature is birds. (3) The disease is transmitted to man by a mosquito; and the species Culex tarsalis is the predominant vector in California. (4) Vector control was the only possible method of attack in 1952 since measures against the reservoir were not conceivable and no vaccine was available for use in humans on a widespread basis.

It was therefore inescapably clear that the only measures that could be taken to reduce the number of cases of the disease were measures which would reduce the contact between susceptible human beings and infected Culex tarsalis mosquitoes.

The great inland Central Valley of California, extending from Kern County to Shasta County and lying between the Coast Range and the Sierra Nevada, has a floor of some 25,000 square miles in extent. Something over half of this vast expanse of agricultural land is served on a year-round basis by local mosquito abatement programs. Since 1946 a $400,000-per-year subvention fund to assist local mosquito abatement programs in areas of mosquito-borne disease threat has been administered by the State of California in a manner to focus mosquito control attention in the Central Valley on efficient control of disease-carrying mosquitoes.

Consequently, in July 1952 there was already in operation a large scale mosquito control program consciously directed to the control of the very species that had to be dealt with to curb the outbreak of encephalitis; and over two-thirds of the population resident in the Central Valley lived within the boundaries of such mosquito abatement districts.

CAUSE OF INCREASE IN VECTORS

Why, then, were cases of encephalitis occurring in alarming numbers, especially among people living in areas that had efficient mosquito control programs? There were two principal reasons: The first was that the tremendous expansion of mosquito breeding areas in the years following World War II as a result of the importation of water into the previously dry areas of the Central Valley, and the putting of hundreds of thousands of acres of previously high and dry land into crops requiring intensive and repetitive irrigation, increased the mosquito production potential of the Central Valley so many fold that only the use of the "miracle" insecticides, such as DDT, enabled mosquito control to keep pace without fantastic costs. Progressively over a period of three years DDT-resistant mosquitoes developed, so that in 1952 the previous effectiveness of mosquito control by chemical treatment was be-

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ginning to crumble. The second reason was that heavy rainfall and snow pack, coupled with an unusually warm winter, resulted early in the spring of 1952 in a greatly increased area of ideal mosquito breeding places in river bottoms and overflow areas. These places quickly became seeded with eggs by the unusually large number of adult Culex tarsalis surviving the warm winter.

The mosquitoes had "never had it so good" and they invaded the agricultural and urban areas in countless numbers. The problem, therefore, seemed to be to cope with a situation in which the normal preventive programs had broken down and the cities and towns were being invaded by hordes of infected adult mosquitoes, each capable of living at least thirty days unless extremely high temperatures intervened to reduce their numbers. This in short was the situation the latter part of July when, if experience in previous years was a guide, the peak of the outbreak should be near.

ATTACK ON ADULT MOSQUITOES

It seemed obvious, then, that if an emergency program were to have any real effect in halting an outbreak that was already a fact, it would be necessary to forsake the basic axiom of prevention and kill adult mosquitoes before they killed us. Any other approach to the problem would be too slow. The next fact that became crystal clear was that it was useless to consider an emergency field program that would be spread over 25,000 square miles, even though many of the inhabitants of the Central Valley lived in isolated houses on farms. Sheer realism dictated that the only chance of doing anything to change the course of the outbreak lay in destroying the mosquitoes already in the some 300 cities and towns of the Central Valley and establishing a defense against invasion of these urban areas by new mosquitoes from the outlying rural areas. Out of this realization came the broad outline of the major features of the much publicized "Operation Culex Tarsalis." The plan was for a three-pronged attack:

1. Aerosol fogging of the entire areas of the cities and towns in the valley from one to three times per week during the months of August and September;

2. Establishment of a perimeter barrier at least one-fourth mile wide around the periphery of each city and town by spraying all appropriate outdoor surfaces, such as buildings, other structures, and vegetation;

3. Intensive larvicidal treatment of all mosquito breeding areas within or immediately adjacent to the cities and towns.

The fogging was to kill adult mosquitoes that penetrated the defenses; the perimeter barrier was to leave a lethal residue of insecticide on all surfaces upon which invading mosquitoes might light (it being assumed that a mosquito would probably light at least once in one-fourth mile of travel if attractive resting places were available); and the larvicidal work was intended to prevent the breeding of new mosquitoes within the defenses or closely adjacent to them.

The nature of the program having been determined, the next question was: Who will do it? It was decided that within the mosquito abatement districts the regular mosquito control agency should carry out the emergency operation in addition to its normal program of prevention, and that in areas outside mosquito abatement districts the state could provide the supplies, special equipment and technical supervision if cities and counties supplied vehicles and labor.

Technical supervision entailed not only direction of insecticidal field operations but evaluation of their timing and effectiveness by biological observations. It was apparent that the full technical vector control staff of the State Health Department would be inadequate for the job, and a request to the U. S. Public Health Service resulted in a sizable augmentation of the technical staff with engineers and entomologists. Cities, counties, local health departments and mosquito abatement districts responded to appeals for help in carrying out the program and it is estimated that during the months of August and September more than 200 men were working full time, seven days a week, on Operation Culex Tarsalis.

The cost of special equipment and supplies for the entire operation, together with other necessary expenses, was estimated at $250,000; and this amount was made available from the state's emergency fund, about two-thirds of it being spent inside mosquito abatement districts and the remainder outside. Without question, local contributions to the emergency program exceeded this figure.

NEEDS FOR THE FUTURE

Taken all in all, Operation Culex Tarsalis stands out as an unusual cooperative statewide joining of forces to meet a dangerous enemy. It seems probable that the emergency measures prevented many cases of western equine encephalitis that would otherwise have occurred; and probable also that the number of cases of St. Louis encephalitis, which usually develop several weeks later than those of the western equine disease, would have been considerably greater had the control measures not been effected. However, in review of the experiences of 1952 with future outbreaks in mind, the conclusion

is inescapable that the normal preventive mosquito control program in the Central Valley is incapable of protecting the population in a year of unusual environmental conditions, and it must also be recognized that the emergency vector control measures employed in 1952 were palliative only.

The first great shortcoming that stands out in a review of the record of 1952 is the disastrously late start of the emergency program. This was due not to a lack of information on occurrence of cases of encephalitis in humans, but to lack of reliable current records, throughout the year, as to the numbers of adult Culex tarsalis mosquitoes in every part of the Central Valley and the proportion of them that carried the viruses of encephalitis.

A second major defect was the disappointing results in many instances with the use of aerosol fogging techniques. Heretofore in California, fogging with insecticide has been employed principally to cope with invasions of pest mosquitoes of the Aedes species. During the emergency program fogging still was effective against Aedes mosquitoes, but only partially effective against Culex.

The two great needs for effective control of mosquito-borne encephalitis in California in future years, therefore, are improved mosquito control techniques, both preventive and emergency, and improved information. To meet these needs, plans have already been drawn for intensive ecologic studies of Culex tarsalis, for investigation of the toxicity of all the current insecticides to mosquitoes in all stages from egg to adult, for development of equipment and techniques for the application of insecticides, for modifications of agricultural practices to minimize mosquito breeding, and finally for the development of an objective method of measuring the density of occurrence of mosquitoes (by species) through an established valley-wide network of observation points. Such a program of determining the numbers of mosquitoes by use of standard equipment to sample mosquitoes, both flying and resting, would be carried on the year around; and during the months from February to October, collected Culex tarsalis mosquitoes would be sealed in pools of fifty each and examined for viruses.

760 Market Street.

The 1952 Outbreak of Encephalitis in California

Long Term Neurologic and Psychiatric Studies of Sequelae

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• For fuller understanding of the nature of infectious encephalitis, continuing study must be made of patients with regard to possible neurological sequelae or aberrations in behavior.

The large outbreak of encephalitis in California in 1952 having offered opportunity for follow-up observation of a large series of patients, many of them children who had convulsions during the acute phase of the disease, pilot studies already have been started and funds are being sought for extending the scope of the investigation over a period of years.

In early observations of patients included in the pilot study, changes in emotional and behavior patterns were noted in some instances. Thus far, with the exception of two infants who had recurrence of convulsions, patients who recovered apparently free of residual effects have remained so.

Further neurological and psychiatric investigation should be carried out.

THE LARGEST EPIDEMIC of infectious encephalitis in California's history occurred in the summer of 1952. Seven hundred ninety-two cases were reported from June through October. In 414 cases etiologic diagnosis was made by serologic tests done at the Viral and Rickettsial Disease Laboratory of the State Department of Public Health. Laboratory results were inconclusive in 108 other cases, while in 198 clinically reported cases of encephalitis the results of laboratory tests were negative.

This group of cases presents an opportunity for follow-up study which is superior to anything previously available. Furthermore, since approximately one-fourth of these cases were in infants under one year, and one-half in children of ten years and under, the need for follow-up study is obvious.

Although the clinical diagnosis of encephalitis as a neurological syndrome has been correctly made in the past, until recent years the specific etiologic agents were not known (for example, the great group of Von Economo's encephalitides, or sleeping sickness). During the past 20 years the viruses causing some of the clinically recognized acute neurological infectious disorders have been identified.[7, 9, 10, 11]

Now, for the first time, a large number of persons who had infectious encephalitis, confirmed both clinically and by the laboratory, can be followed from convalescence through ensuing years. Continuous observation of them will provide a basis for sound conclusions relative to the frequency and severity of neurological and psychiatric residual effects. Furthermore, it will be determined whether neurological complications occur after a period of apparent recovery. It has been the authors' impression that there are residual effects in fewer than 5 per cent of persons who have had St. Louis or western equine encephalitis. This is in contrast to the more severe manifestations in eastern equine and Japanese B encephalitis. This study will remove the uncertainty associated with these impressions.

The scope of the study includes several types of investigation, some of which are best done by the facilities of the state and local health departments; the clinical phase of the follow-up, however, lends itself very well to the resources of a medical school. A cooperative program, therefore, is being planned jointly by the state and local health departments and the Stanford University School of Medicine. The details of such a plan take time to work out. Recognizing that important data would be lost through delay, the State Department of Public Health set up a pilot study to operate for six months (January-June, 1953) while plans were being made for a long term study. The program was set up in San Joaquin County where 57 laboratory-confirmed and inconclusive cases occurred during the 1952 summer epidemic. The pilot study is a coordinated activity of the State Department of Public Health, San Joaquin

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County District Health Department, and the division of neuropsychiatry, department of medicine of the Stanford School of Medicine, with the assistance of the electroencephalographic laboratory facilities of the Stockton State Hospital.

Before setting up clinics for this follow-up study, the county health officer discussed the plan with the San Joaquin County Medical Society and received its approval. A plan for sending follow-up progress notes to the physician who treated the patient was under consideration from the beginning and is now in operation. It was decided that during the first year the patients should be checked every three months. Depending upon the results of the pilot study, patients will be followed once or twice a year for the next two or three years, and possibly less often as indicated for following years.

Encouraging factors in the early part of the study were the interest of physicians and patients in San Joaquin County and the requests from other counties that they be included in the initial pilot study. The San Joaquin pilot study area, together with the counties from which requests have been received, actually includes therefore the major portion of the epidemic areas in the Central Valley of the state. In light of the requests, it was felt that insofar as possible the pilot study should be extended to include the additional counties. Therefore, 14 clinics were held, two each in Kern, Fresno, Stanislaus and Sacramento, and others in Tulare, Kings, Merced and Contra Costa counties. Because of this interest, additional observations have been made by the county health departments in Butte, Sutter, Yolo and Yuba counties.

OBSERVATIONS IN PILOT STUDY

In the pilot study, 441 follow-up examinations were made on approximately 300 patients. Electroencephalograms have been obtained in 33 cases. They were made in several different laboratories and have not yet been analyzed.

A common unsolicited comment by husband or wife may be phrased in this manner: "Since the illness, he has acted like a different person—fussy with the children, irritable to me, and generally rather restless." With reference to some children, parents have voluntarily stated that they had noted a difference in behavior following the illness. In one case the child had become pugnacious toward his associates. He was restless, was not sleeping or eating as well as formerly, and had emotional outbursts characterized by temper tantrums and crying for no apparent reason.

In general it was noted that emotional and behavior changes may occur with or without detectable neurological damage.

Another complication of interest was residual headache that was a complaint in many cases. In some instances it was a major complaint for several months following the acute febrile phase of the illness, and a common reply by a patient when asked how he felt was, "If only I could get rid of this terrific headache, I think I'd feel all right."

These observations are in agreement with those of others who have reported on postencephalitic behavior.[2, 3, 4, 6, 8]

It is too early to give a completed survey of the clinical results of studies to date except to say that at present all patients who recovered free of residual effects have remained so, except for two infants who had a recurrence of convulsions.

As a result of the pilot study, the need for a control group or groups is recognized. For example, it might be said that the unusual behavior in children returning home from the hospital is due to the excessive amount of attention and care they received while there. It has been suggested, therefore, that a similar group of patients who had non-paralytic poliomyelitis and who likewise received hospital care but did not have encephalitis, be selected for comparison of behavior following return to their homes. Another control would be a follow-up study of the siblings of patients to check their medical histories against those of the patients who had encephalitis.

Since it is recognized that in encephalitis such as, for example, Von Economo's, neurological or psychiatric complications may develop months or years after the acute phase of the disease, it is important that this pilot study be followed through on a long-term basis, over a period of from 10 to 15 years. For example, the study of patients who had convulsions warrants long term observation. Almost 80 per cent of patients under one year of age in the group under study and 60 per cent of the children under five years of age had one or more convulsions during the acute phase of encephalitis. The association of convulsions with high fever has long been recognized by pediatricians but the exact etiologic relationship is usually not known. Now available for study, however, is a group of infants and children who have had one to several convulsions during the initial phase of an illness in which there is specific knowledge of the organism and of its action on the central nervous system. It is also recognized by pediatricians and neurologists that sometimes a patient who has a convulsion with a fever in infancy or early childhood develops an epileptic disorder later, often during the adolescent years. It is therefore most important that these children who have had one or more convulsions during the acute phase of etiologically diagnosed encephalitis be kept under observation at least through adolescence.

The importance of follow-up study from the psychiatric standpoint was recognized by Fulton and Burton[5] in a follow-up study of several patients who had had western equine encephalitis during a large epidemic in Saskatchewan, Canada. They found that after a few years several children and adults developed personality changes that necessitated psychiatric institutional care. Recognizing the possibility of relationship, authorities of the Saskatchewan mental hospitals now have tests for encephalitis antibodies carried out on all patients entering the institutions.

From these observations, the importance of a careful immunological and clinical follow-up study of established cases of St. Louis and western equine encephalomyelitis occurring in the Central Valley of the state becomes apparent. In view of the unusual opportunities afforded and the obvious clinical reasons for studying this large number of proven cases, a request has been made to the National Institutes of Health for a long-term grant to make possible continuous study of these cases. If the grant is received, the present preliminary follow-up study will be extended over a period of from 10 to 15 years. It is also planned to include in this study a certain number of proven cases from earlier years as well as to add future proven cases and to make additional pathological studies insofar as funds permit. From this work, more precise knowledge will become available relative to the after-effects of the infectious encephalitides which are endemic in the Central Valley of California.

450 Sutter Street.

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Coccidioidomycosis in San Fernando Valley

Report of a Study Carried Out in 1951-1952

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• *Four cases of benign pulmonary coccidioidomycosis occurred during May 1951 among some 35 teenage students at a boarding school and farm for boys that occupies 30 acres in the northwestern section of the San Fernando Valley within the City of Los Angeles.*

Epidemiological and serological study of the patients yielded evidence that exposure had occurred on the farm or nearby.

Correlation of results of skin testing for sensitivity to coccidioidin among students over the subsequent months and of serologic studies in cases in which there was positive reaction to skin tests indicated exposure to coccidioides during the time the subjects were in residence at the school. In addition, two boys had conversion from negative to positive reaction to coccidioidin while they were in residence.

In May 1951, four cases of acute pulmonary coccidioidomycosis occurred among a group of some 35 teenage boys resident in a facility in the Chatsworth area of San Fernando Valley. Symptoms at the onset of illness included headache, malaise, cough, pain in the chest, fever and, in two cases, a rash diagnosed as erythema nodosum.

In all cases abnormalities were observed in x-ray films of the chest. They were described, respectively, as bilateral hilar pneumonitis; left hilar adenopathy, calcified, with a 2 cm. cavity in the second left interspace; right hilar adenopathy with hazy area right upper lobe; and rounded, hazy density right base suggestive of pneumonia.

The boys became ill May 10, 23, 25 and 29 respectively. Skin tests with coccidioidin in 1:100 dilution were done in three cases within two weeks of the onset and in one case two months after onset. There was positive reaction in all cases. Results of complement fixation tests for coccidioidal infection were positive in the one case in which they were done, three months after onset. Precipitin tests in the same case were negative.

Coccidioides immitis was recovered from gastric washings in one case. This and the clinical course and findings, roentgenographic observations and positive reaction to skin tests establish the diagnosis with reasonable certainty.

The four boys who had the disease had been in continuous residence at the school for periods varying from four to eight months at the time of onset. None had made recent trips outside the area. The incubation period of pulmonary coccidioidomycosis is usually nine to eleven days. All the boys had had virtually constant exposure to dust and soil in an area in which cases of coccidioidal infection have been reported for years. It was not possible to identify any single, common exposure even in the three cases in which onset occurred within the span of a few days.

In July, 19 of the other resident boys were given skin tests and five had positive reaction. Complement fixation and precipitin tests were done on specimens of blood from those with positive reaction. In two cases there were precipitins only, in one both precipitins and complement fixing antibodies, in one only complement fixing antibodies, and in one neither. Since precipitins precede complement fixing antibodies in the blood and are shorter lived[1] three of the boys with positive reaction apparently had been recently exposed to *Coccidioides immitis* and had infection without clinical symptoms while the other two apparently had had exposure at a time more or less remote. The five boys with positive reaction but no clinical symptoms had been in continuous residence at the school for from two to eight months prior to testing. In September, seven more boys (old residents and new arrivals) were given skin tests and three of them, old residents who had been missed in the previous tests in July, had positive reaction. They had been in continuous residence at the school for eight, nine and twelve months. Complement-fixation and precipitin tests were done on serum from these three boys. None had precipitins, two had complement-fixation antibodies and one had neither. These results indicate that exposure had been more than three months previously.

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In addition, seven boys who had reacted negatively to the coccidioidin skin test in July were retested in September. One had positive reaction, and precipitins were present in the blood. There were no clinical symptoms. As the boy had not left the area between the test in July and that in September, exposure in the area in question was clearly indicated.

Two subjects who in July had had positive reaction to skin tests, and precipitins but no complement-fixation antibodies in the blood, were retested in October. At that time the serum of one revealed complement-fixation antibodies only, which had developed in the interval and persisted, while the precipitins had disappeared. In the serum of the other there were neither precipitins nor complement-fixation antibodies.

In subsequent months boys entering the school were given skin tests before they were enrolled. None had positive reaction at that time. In May 1952, the 35 boys then in resident at the facility were retested and on this occasion one who two and a half months previously had had no reaction had positive reaction, which confirmed the endemicity of coccidioides in the area. One other boy with positive reaction in May 1952 had been in residence at the school continuously for the preceding 18 months. Five members of the staff were also given skin tests at this time and one had positive reaction. He had been born in the San Fernando Valley and had lived there all his life with the exception of four years spent in Oregon.

CONCLUSIONS

Coccidioides immitis is endemic in the Chatsworth area of the San Fernando Valley.

In the cases here described the patients were exposed and infected while participating in various outdoor play and farming activities in the area.

116 Temple Street.

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Urinary Tract Infections

Problems in Medical Management

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• The lesion principally responsible for chronic, or recurrent, urinary tract infection is a focus in the interstitial tissue of the kidney. Most cursory antimicrobial therapy suppresses the manifestations of lower urinary tract involvement but does not eradicate the renal focus. In order to cure rather than merely suppress the infection, it is imperative that, as early as possible, steps be taken to isolate and identify the etiologic microorganism and to determine its sensitivity to antimicrobial agents. Based on this information sufficient amounts of drug should be given for an adequate period (probably at least two weeks) to eradicate the infection within the renal tissue. Such a program would tend to reduce the number of cases in which irreversible renal failure develops from chronic pyelonephritis.

INFECTIONS of the urinary tract are second in frequency only to upper respiratory tract infections, and often more severe. In a series of 3,000 unselected autopsies active "septic infection" of the urinary tract was noted in 4.8 per cent.[12] Before attempting to discuss the management of these disorders it may be desirable to outline their natural history. It had long been suspected that some connection existed between the acute, brief episodes of manifest urinary tract infection and the ultimate development of renal failure. The long term studies of individual patients by Longcope and Winkewerder[9] suggested that often a process of inflammation smouldering below the levels of manifest symptoms connected the episodes of clinically evident pyelonephritis and resulted in progressive scarring and fibrosis of renal tissue. That such a progressive course is by no means inevitable is indicated by the finding[11] of the scars of healed pyelonephritis in nearly 14 per cent of 1,000 consecutive autopsies at the Boston City Hospital. Pyelonephritis thus often heals spontaneously. However, occasionally it may be a very malignant disease with rapid progression toward renal failure, as in papillary necrosis occurring in nearly one fifth of diabetic patients with pyelonephritis.[10]

The hypothetical life history of a female with urinary tract infection (Chart 1) will serve as illustration. In early childhood there occurred a febrile episode recognizable as acute pyelonephritis, perhaps associated with some minor anatomical anomaly of the urinary tract. Or possibly even the initial episode was mild and not associated with clear-cut symptoms referable to the urinary tract. Subsequently the process was quiescent or only minor flare-ups occurred during adolescence. Shortly after marriage the patient had an attack of "honeymoon pyelitis." During pregnancy "pyelitis" developed in the second or third trimester. There was no toxemia and a normal delivery was followed by a period of quiescence and apparent health. Both in childhood and in adult life the infection might spontaneously heal completely. (More frequently, however, there are continuing attacks of pain in the flanks, intermittent pyuria, dysuria and urinary frequency with little fever or other systemic manifestation. During symptom-free periods bacteria may often be detected in the urine.) Up to this time the kidney function was quite unimpaired. Then nitrogen retention, proteinuria, and perhaps an associated rise in blood pressure developed. Subsequently, the progression of renal failure was exceedingly rapid, or perhaps it developed slowly over many years.

Looking at urinary tract infection as a long-term problem and not as a series of brief, unconnected episodes, it becomes clear that the basic, important lesion is not an infection of the urine, or of the duct

LIFE CHART OF A FEMALE PATIENT WITH URINARY TRACT INFECTION

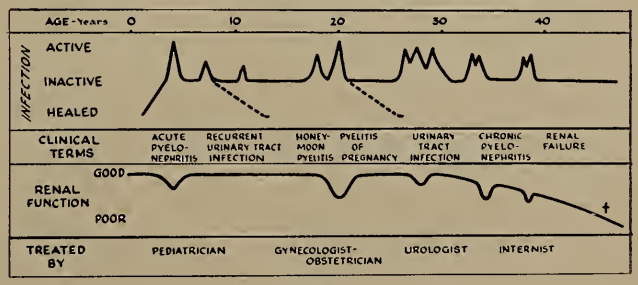


CHART 1

From the Divisions of Microbiology, Medicine and Pediatrics, University of California School of Medicine, San Francisco.

Presented before the Section on Pediatrics, at the 82nd Meeting of the California Medical Association, May 24-28, 1953.

Based on a cooperative study with Drs. James Hopper, Jr., and Frank Hinman, Jr., and supported in part by a grant-in-aid from Burroughs Wellcome & Co., Tuckahoe, N. Y. Dr. Donald R. Smith gave valuable advice.

system from glomerulus to bladder, but infection of the interstitial tissue of the kidney.[2, 9] Regardless of the route (whether hematogenous, lymphogenous, or urogenous) by which the infecting bacteria reach the kidney, it is the chronic inflammation within the parenchyma with destruction and fibrosis of nephrons that determines chronicity, resistance to treatment, and ultimate outcome. The management of urinary tract infection and its problems must be considered from this point of view. It was recently stressed by Birchall[1] that one of the difficulties in over-all management is the discontinuity of attack, each episode being treated as an isolated event by a different physician (pediatrician, gynecologist, urologist, internist). For optimal handling of the patient a different, long-term approach is necessary.

To cover all aspects of the disease the management of urinary tract infection falls properly into three categories: (1) Correction of structural abnormality of the tract. (2) Treatment of the infective process. (3) Palliative management of renal failure and associated disturbances. The first is in the province of the urologist; investigation and correction are carried out by specialized methods. The third, the treatment of renal insufficiency, hypertension and other consequent conditions, requires careful attention to detailed management of fluids, electrolytes, diet and other such factors. Expert management along these lines will often keep a patient alive to receive antibiotic therapy. This presentation is concerned with the second of the three categories of management mentioned above, treatment of the infectious process, for by optimal treatment organic damage to the kidney may be prevented.

A planned attack upon the infective process includes a specific etiologic diagnosis, selection of appropriate antimicrobial agents, administration of them in adequate doses for a sufficient time, and prolonged follow-up to establish cure with certainty. It is proposed to consider each of these elements in their logical sequence. Some technical detail will have to be included since, quite commonly, minor "unimportant" features are omitted, contributing to therapeutic failure.

ETIOLOGIC DIAGNOSIS

The key to etiologic diagnosis is a careful examination of the urine. Urine specimens must be collected, before chemotherapy is started, by methods suitable to exclude contamination from the outside (catheterization in females; clean, voided specimens in males), and must be examined promptly lest bacteria either die or multiply. Complete bacteriological examination includes the following procedures:

1. Examination of a stained smear of urine. (Ordinarily bacteria will be noted only if the number exceeds 10,000 per milliliter.)

2. Qualitative culture to isolate the different kinds of bacteria present.

3. Quantitative culture to estimate the number of bacteria in fresh urine. This is essential because the voided urine of normal persons may contain a few bacteria, perhaps up to 500 per milliliter. These organisms originate in the normal urethral flora or in occasional lymphatic transport from other viscera to the lower urinary tract. Their presence does not ordinarily denote disease. Larger numbers of bacteria, in excess of 1,000 per milliliter, even in the absence of pus cells, are indicative of urinary tract infection.

4. Special studies, when indicated, to detect anaerobic bacteria, tubercle bacilli, fungi, or pleuropneumonia-like organisms.

THERAPEUTIC AGENTS

The principal reason for isolating the etiologic microorganisms is not the academic one of specific diagnosis for its own sake, but the urgent need to determine the antimicrobial drug most likely to be effective against the particular microorganism. What with the large scale use and misuse of antibiotics, many patients now harbor bacteria which are resistant to one or several drugs. The rapid, qualitative "disc" method of antibiotic sensitivity testing, in spite of many inadequacies, often gives a valuable lead as to what drugs are likely to inhibit the infecting microorganisms, and, of equal value, what drugs should not be used because the organisms appear to be resistant to them. While this, admittedly, is only a partial answer to the problem, such an answer can be obtained rapidly and cheaply. If a proper urine specimen is submitted to the laboratory in the afternoon, the physician can be informed the next morning as to the kinds and the number of bacteria present and the drugs to which they are resistant or sensitive. With good collaboration between physician and laboratory these results can give valuable guidance to therapy.

Most antimicrobial drugs are excreted largely through the kidneys and concentrated in the proximal convoluted tubules. Consequently the drug concentration in the urine tends to be several times that present in body fluids, blood, or tissues. For this reason it has become customary to use small, so-called "urinary doses" of most antimicrobial agents which result in urinary concentrations sufficient to inhibit most infecting microorganisms. Thus 0.5 gm. of a sulfonamide taken four times daily results in a concentration of approximately 50 mg. of the drug per 100 cc. of urine, but would obviously not

be an adequate amount to produce systemic tissue levels of the drug. If such "urinary doses" of antimicrobial drugs are taken for a few days the urine is usually "sterilized" quite promptly, and the symptoms, particularly of lower urinary tract involvement, subside rapidly. Cultures taken during therapy and immediately thereafter are frequently negative. This may lead to the belief, often unwarranted, that the patient has been "cured."

It has been said already that in pyelonephritis there is primarily infection in the interstitial tissues of the kidney, and that the involvement of the urinary passages is often secondary. The condition of the urine may be only a manifestation of the neighborhood involvement of renal tissue and inflammation of the lower tract. On the other hand, the urine may be sterile and contain no pus cells while there is active and progressive infection and inflammation in the renal parenchyma. Logically, therefore, treatment should not be limited to sterilization of the urine, which can be readily accomplished, but should be directed to eradication of the renal infection. From this standpoint the use of "urinary dosage" of antimicrobial agents, and of "urinary antiseptics," such as methenamine, which function only in an environment of acid urine, seems quite perfunctory. Such therapy provides symptomatic relief, without attacking the source of the trouble. This situation in pyelonephritis could be compared to that well-recognized in bacterial endocarditis.[4] If a patient with endocarditis is treated with small doses of a drug that can inhibit the infecting organism, the symptoms of infection (fever, embolic phenomena, fatigue) may subside and no organisms grow on a culture of blood. However, soon after such treatment is discontinued, relapse occurs, because the focus of active infection within the vegetation on the heart valve has not been eradicated. Such patients are cured only if a drug known to kill (and not merely inhibit) the infecting organism is given in adequate dosage for a sufficient length of time to penetrate the vegetation, eradicate most viable organisms and permit solid fibrosis to encapsulate the remaining few central bacteria so that they will be unable to proliferate again when chemotherapy is discontinued.

It would seem logical to apply similar principles in the treatment of urinary tract infection when renal involvement is evident. Following isolation of the infecting microorganism from the urine, it should be subjected to antibiotic sensitivity tests that measure not only the inhibitory but also the killing capacity of the drug.[4, 6, 8] Then, using drugs, singly or in combination, that are lethal to the infecting bacteria in the test tube, "systemic" rather than "urinary" doses should be given — that is, amounts sufficient to saturate tissues with drug levels capable of eradicating the bacteria. This drug regimen must be continued long enough to permit sterilization of tissues, probably for more than two weeks. Subsequently cultures should be obtained for at least three months, to make certain infection does not recur. It is probable that with such a course of treatment generally carried out, the rate of permanent cure would be greatly increased and that the number of cases in which disease progressed into renal failure owing to chronic pyelonephritis would be diminished.

However, this ideal — possibly idealistic — approach to treatment is not without flaws, which pertain to the properties of antimicrobial drugs and to characteristics of chronic pyelonephritis.

Most cases of pyelonephritis are associated with Gram-negative bacteria. The principal drugs active against such organisms, like sulfonamides, aureomycin, chloramphenicol, or terramycin, are inhibitory rather than bactericidal. They often "sterilize" the urine promptly, but probably do not eradicate foci of infection in the interstitial tissue of the kidney, just as they do not cure bacterial endocarditis.[4] Streptomycin is bactericidal but drug-resistant forms emerge so quickly that this drug cannot be usefully employed alone for more than four days in bacterial infections, a time too short to permit eradication of an interstitial focus. Combinations of drugs may occasionally be used for this purpose but selecting them in the laboratory still remains a laborious procedure, and an indiscriminate mixture of drugs is likely to be ineffective. Available information about antibiotic combinations has been summarized elsewhere.[6]

Among other drugs, polymyxin B would appear to offer some hope. This agent is highly bactericidal for many Gram-negative bacteria,[7] including many resistant to other drugs. Recent studies indicate[3] that in persons with good renal function doses up to 2 mg. per kilogram of body weight per day for 14 days are tolerated without significant evidence of nephrotoxicity. There are, however, unpleasant side actions (local pain at injection site, neurotoxic effects) which make more prolonged use difficult to tolerate. In selected cases of acute pyelonephritis in children, polymyxin B resulted in complete eradication of infection.[5, 13] When adults with known long-standing pyelonephritis, but good renal function, were treated with polymyxin B for two weeks in doses of 1.5 to 2.2 mg. per kilogram per day, cultures of the urine promptly became negative for bacterial growth and remained so for from one to six weeks after treatment. However, in many cases the original bacteria reappeared in the urine eventually. This suggests strongly that the fibrosing in-

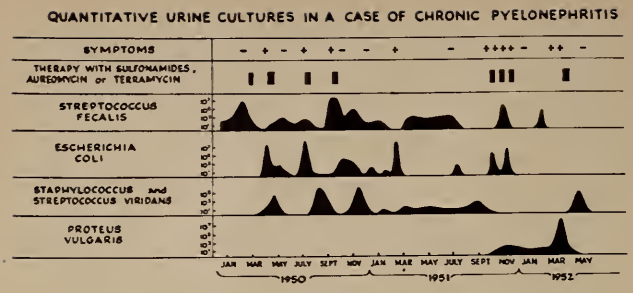


CHART 2

fectious focus in the renal tissue is not readily accessible to drugs and that treatment would have to be much more prolonged than seemed feasible with polymyxin B.[3]

It is a common experience among those who treat many patients with chronic urinary tract infection to observe the disappearance of the prevalent bacterial species under treatment with one drug, and its replacement with another species, usually resistant to the agent being used. The origin of these "superinfecting" organisms is not known, but it seems that they usually appear when a prevalent bacterial population is suppressed by antimicrobial therapy. However, that event merely seems to increase the opportunity for multiplication, and perhaps establishment of a different bacterial species. When quantitative studies of the growth of organisms on cultures of the urine of persons with long-standing urinary tract infection are carried out, spontaneous changes in flora are sometimes observed as shown in the detailed bacteriological study summarized in Chart 2. While it seems definite that the patient initially harbored an enterococcus infection in the kidney parenchyma, other organisms appeared at times in the urine, and on certain occasions enterococci could not be found, but only the "superinfecting" bacteria descended from the kidneys.

It might even be conjectured that some abnormality of lymphatic connection, or of urinary flow, might predispose such a person to continuous seeding of the kidneys with enteric organisms; that once a given bacterial species was established, other organisms might have less opportunity of settling down and multiplying; but, if the first species were suppressed by drugs or change in environment, new varieties of bacteria might readily supplant it. While this is pure speculation, it lends an additional discouraging note to the problem of treating chronic, long-standing urinary tract infection and emphasizes the urgency of definitive diagnosis and thorough treatment as early as possible, when permanent eradication of infection is frequently feasible by present-day methods.

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Conservative Therapy of Benign Uterine Bleeding

With Special Reference to the Use of Ergot

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• *Although operation frequently is carried out in cases of excessive uterine bleeding of benign origin, particularly if fibrous tumor is present, in many cases major surgical intervention could be averted by adequate conservative therapy.*

The authors have given Ergotrate® over long periods with good results in many cases and have noted no severe side effects. If this therapy fails, diagnostic dilatation and curettement sometimes reveals and removes the cause of bleeding.

If infection is a factor, use of sulfonamides or antibiotics sometimes has dramatic effect.

IT HAS LONG BEEN RECOGNIZED that many types of functional uterine hemorrhage or excessive bleeding of benign origin, whatever the cause, are frequently controllable by conservative treatment or minor surgical procedures. Yet there seems to be a tendency to resort to hysterectomy or irradiation without giving adequate trial to simpler measures.

Some of the common causes of excessive bleeding of benign origin are myomas and polyps, chronic cervicitis and endocervicitis, subinvoluted or atonic uterus, either postpartal or postabortal with or without adherent placental tissue, hyperplastic or polypoid endometrium, endocrinologic dysfunction, pelvic inflammatory disease, adenomyosis, endometriosis and the presence of some kinds of ovarian neoplasms. Of these causes, probably the most common are myomas and polyps, with submucous myomas and endometrial polyps the most likely to cause abnormal bleeding — usually excessive flow during menstrual periods.

Apparently there are some physicians and many laymen who believe that mere proof of the presence of a myoma in the uterus, even though it cause no symptoms, makes major operation imperative. Almost daily, gynecologists consult with patients who have already been advised by the referring physician that hysterectomy probably should be done immediately. It is not uncommon for the patient to say that some mention has been made of the likelihood of present or future malignant change. And once suspicion of that possibility has been aroused, very few women can calmly accept advice for other than surgical treatment.

Sarcomatous change is, in fact, exceedingly uncommon and usually warning is given by a sudden increase in the size of the tumor. Certainly it does not occur often enough to warrant indiscriminate removal of the uterus in every case in which there is a fibroid tumor in the organ. (This does not apply, of course, if the tumor is larger than a fetus in the fourth month or is obviously causing pressure symptoms owing to size or location.)

Like other observers,[1-3] the authors believe in a conservative approach—generally in watchful waiting and, if there is excessive bleeding, application of all known means to control it in the hope of avoiding operation. If conservative therapy is successful, the uterus is preserved for women who wish to have children, and for others the bleeding may be kept in control through the menopause when natural cessation of bleeding and involution of fibroid tumors takes place. Morover, if hysterectomy ultimately becomes necessary, a physician who has obviously tried to avoid it is more likely to have his advice followed when he recommends operation.

In cases in which extraordinary bleeding is not a complaint but small myomas are noted in the course of examination done routinely or in connection with some minor complaint, the physician should tell the patient of the condition, explain that she need not be fearful, let her know that operation probably will never be necessary, advise her to have examinations every six months and meanwhile to report any unusual symptoms promptly. If excessive bleeding is the chief complaint, however, and myomas are present and the uterus moderately enlarged, conservative therapy is indicated. Only if all other measures are ineffectual should operation be considered.

The authors have given Ergotrate® in many cases of bleeding of benign origin, sometimes continuing treatment for long periods, with good results.

Ergot has been commonly used by physicians for many years, chiefly in the treatment of postabortal or postpartal bleeding. But in general the drug has been employed with trepidation and to limited degree for short periods, probably owing to unfounded statements in early textbooks regarding toxic effects,

the development of gangrene of the extremities and other dire sequelae of long-continued administration. Certainly the value of the drug in the treatment of benign functional bleeding and bleeding caused by the presence of fibroid growths has been almost entirely overlooked.

One of the authors in more than forty years of administration of ergonovine maleate in adequate dosage for long periods has yet to observe gangrene or other serious effect from use of it. Occasionally a patient appears not to tolerate the drug, but in such cases there is only nausea or some other mild symptom that abates when treatment is discontinued; and in many instances the therapy can be resumed later without ill effect. Rarely, severe cramping follows each dose of ergonovine maleate; if it does, a submucous polyp must be suspected and use of the drug discontinued.

The dosage should be varied to fit the requirements in each case. The authors usually start with one 0.2 mg. tablet of Ergotrate® (1/320 grain) by mouth four times daily throughout the menstrual period. Then, depending upon the response, the dosage is adjusted. If there is no response or it is slow, the dosage is increased in amount—say to 0.4 mg. (1/160 grain) — and in frequency of administration. Sometimes in severe cases it may be necessary to begin giving the drug several days before the first day of the period. In cases of severe bleeding, other measures should also be carried out—rest in bed, application of an ice cap to the lower part of the abdomen, prescription of diet and of supplementary vitamins, administration of hematinic agents and treatment of blood dyscrasia if present. If the cervix is eroded or if cervicitis or endocervicitis is present, appropriate treatment must be given.

This therapy is not always effective, and even when it is, the desired results are not always obtained immediately. Ordinarily, improvement increases with each menstrual period and the amount of bleeding does not approach normal until treatment has been continued through four or five periods. As bleeding diminishes, the dosage may be reduced. In many instances fibroid formations appear to decrease in size during therapy.

The same general regimen often is effective also in treatment of benign bleeding owing to other causes — postpartal and postabortal bleeding, the bleeding of ovarian dysfunction and functional menorrhagia.

When the treatment described is not effective and myomas or other etiologic factors cannot be demonstrated, further search must be made for the cause and other means of therapy employed. Sometimes diagnostic dilatation and curettement may at once reveal and remove the cause—perhaps a remnant of placental tissue, or endometrial hyperplasia or polyps in the cervical canal. Often in cases of endocervicitis, as evidenced by swelling and patency of the cervical canal with profuse bleeding upon contact, administration of sulfonamides or antibiotics has dramatic results. Occasionally in such cases it may be necessary to strip the cervical canal with a very fine cautery tip, gently and carefully lest trauma cause stricture. In a surprising number of cases excessive bleeding will abate with effective treatment of chronic cystic cervicitis, cervical infection or hypertrophy of the cervix with Nabothian cysts. When cervical stenosis is the cause of bleeding, as it frequently is, dilatation is sometimes of benefit. It can be carried out in a physician's office with topical anesthesia.

Occasionally when bleeding does not diminish with administration of Ergotrate alone, the authors use a compound of Ergotrate, 0.2 mg., cotarnine chloride, 95.0 mg., and cottonroot bark, 95.0 mg., put into a capsule and given every 3 to 4 hours as necessary. This seems to have additional effect but it increases the cost of medication.

The authors are opposed to the use of estrogenic hormones[2-4] in cases of excessive bleeding, particularly in the presence of myomas or adenomyosis, on the ground that the patient may already have overgeneration of female sex hormones. And although they have had but limited experience with the use of androgens, the results observed have been very disappointing—no improvement or very short-lived benefit when the hormone was given in recommended dosage.

Believing that there is rarely if ever justification for destruction of ovarian tissue in the therapy of benign bleeding, the authors consider irradiation warranted only for malignant conditions. Since patients differ in degree of radiosensitivity, what might appear to be a relatively innocuous dose in one case might have very severe effect in another. In addition, there may be undesirable side effects such as cystitis, proctitis, or premature menopausal symptoms as a result of ovarian damage. Delayed effects many years after radium therapy have been observed, cervical stricture quite commonly. It is felt that when conservative therapy is not effective, vaginal hysterectomy is preferable to irradiation even though the patient be a poor surgical risk.

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Postoperative Parenteral Nutrition

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• Parenteral feeding is not an adequate substitute for oral feeding. Water and electrolytes can readily be supplied parenterally, but not all necessary nutrients. To provide the 2,000 to 2,500 calories per day needed for adequate energy and to avoid oxidation of protein, concentrations of dextrose as great as 25 per cent with an additional 5 per cent of ethyl alcohol have been used parenterally with success. Fat emulsions have been given intravenously with some success, but undesirable reactions in as many as 16 per cent of patients have been reported. Protein may be given as amino acids in solution with 10 to 15 per cent dextrose. Water-soluble vitamins may be lost through diuresis if administered intravenously; of these vitamin C is necessary to healing of wounds and appears to have special value in reactions to stress. If fat nutrition is impaired, deficiency in fat-soluble vitamins is to be expected; of these, vitamin K is important to production of prothrombin and therefore especially necessary to recovery from operation or injury.

Among the conditions retarding postoperative convalescence in which the importance of nutritional deficiencies has been emphasized in recent observations are retarded wound healing,[5] decreased resistance to infection,[16] anemia, increased susceptibility to hemorrhagic shock,[8] and reduction in the activity of enzymes.[2] Such deficiencies may be the result of prolonged dietary inadequacy or of recent nutritional impairment occasioned by acute illness. Moreover, certain operations impose physiological stress which increases the nutritional needs of the patient at a time when oral feeding is contraindicated or is inadequate. Water and electrolytes can be readily supplied parenterally, but not all necessary nutrients can be. Care must be taken, therefore, to detect nutritional deficiencies early and correct them promptly. It is with supplying the nutritional elements that are more difficult to administer than water and electrolytes that this presentation is concerned.

Special nutritional regimens are indicated for patients undergoing multiple operations, in order to counteract the catabolic effect of the procedures. Resumption of special nutritional measures may be needed in event of relapse. Application of a sound nutritional plan will prevent in part the loss of weight and physical debility which often occur in early convalescence from injury or disease. However, it is necessary also to avoid preventable loss of blood or faults in operative technique which may complicate the nutritional problem, for even the most thorough postoperative measures are not adequate to compensate for them. The early resumption of normal eating is the most important factor in maintaining the patient's nutrition.

Nutritional requirements include six major components of the diet: Water, minerals, carbohydrates, fats, proteins and vitamins. Carbohydrates, fats and proteins are sources of energy (calories) and provide for growth and repair of tissues. Water, minerals and vitamins do not yield energy, but are essential elements of the chemical mechanisms for the utilization of energy and for the synthesis of various essential metabolites such as hormones and enzymes. The minerals are also incorporated into the structure of the tissues and, in solution, play a role in water metabolism and acid-base equilibrium as well as in other important aspects of metabolism.

Caloric requirements. Energy for physiological processes is provided by the combustion of carbohydrates, fats and proteins, but carbohydrates and fats are physiologically the most economic sources. Proteins serve primarily to provide for tissue growth and repair but it is important to emphasize that they too are metabolized for energy if the caloric intake from other foods is inadequate. Normal, healthy adolescents or adults at rest require 25 calories per kilogram of body weight per day (approximately 1,600 calories); young infants, 60 calories per kilogram; older infants, 55 calories per kilogram; children, 30 calories per kilogram per day. During periods of growth or convalescence extra calories are needed. In special circumstances such as infection accompanied by elevated temperature, or in heightened metabolism from any cause

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the caloric demand is further increased. These factors raise the maintenance caloric requirements for adolescents and adults to 30 to 35 calories per kilogram per day (2,000 to 2,500 calories).

Carbohydrate requirements. Carbohydrates are depended upon as an immediate source of energy, but the ability of the body to utilize parenterally administered sugar is limited. According to Lockhart and Elman[6] it is usually not desirable to infuse dextrose intravenously at a rate exceeding 0.5 gm. per kilogram of body weight per hour, since considerable glycosuria, diuresis and consequent dehydration are likely to result. As the usual solution of dextrose—50 gm. per liter—supplies only 200 calories per liter, more concentrated solutions have been tried and found to be well tolerated if administered very slowly. Spencer and Beal[11] reported that in trials with a 25 per cent solution of dextrose 93.8 per cent was retained and that the risk of phlebitis at the site of infusion was "minimal." They administered the solution at a rate of 40 to 60 gm. per hour, a faster rate than that recommended by Lockhart and Elman. None of the subjects in their studies, however, was in the immediate postoperative period.

The use in parenteral nutrition of so-called "invert sugar," which is a mixture of dextrose and fructose prepared by the hydrolysis of cane sugar, has recently been investigated.[4, 12, 13, 14] Proponents of invert sugar believe that it is more efficiently utilized than an equal quantity of dextrose, but in practice the difference does not seem to be significant.

Ethyl alcohol, which supplies about 5.6 calories per gram, is sometimes added to solutions for parenteral administration, but as the capacity of the body to utilize alcohol is limited and the cumulative effects may be undesirable, alcohol should be used in concentrations no greater than 5 per cent, and only in combination with dextrose. Spencer and Beal[11] added 5 per cent alcohol to 25 per cent of dextrose in the solution used in their studies, which was equivalent to 1,280 calories per liter.

Fat requirements. As fats have a caloric value (9 calories per gram) more than twice that of carbohydrates or proteins, methods of parenteral administration have been carefully explored. Although fat emulsions have been given intravenously with generally satisfactory results, there are several obstacles to widespread use of them. The preparation of a reproducible, pyrogen-free emulsion which remains stable in storage has not yet been achieved. The incidence of reactions to lipid infusions was as high as 16 per cent in the experiments of Shafiroff and Mulholland.[10] These reactions included headache, chills, nausea, vomiting and fever. The fever may be a "thermogenic reaction" to injection of fat at a rate which exceeds the capacity of the body to utilize it. Orally administered fat is normally stored in fat depots and slowly oxidized in accordance with the needs of the body. It is possible that if large quantities of fat are given intravenously, storage cannot be adequately accomplished and consequently rapid oxidation occurs, with resultant evolution of excessive heat.[3] This hypothesis is supported by the occurrence of ketonemia during the infusion of fat.

No notable damage to the liver, spleen or kidneys has been ascribed to the use of fat emulsions.

Protein requirements. In addition to the minimal protein required for regular replacement of tissue, the amount needed in postoperative convalescence, although highly variable, may be safely assumed to be greater than the normal daily requirement of 1 gm. per kilogram of body weight—in some patients 2 to 4 gm.[1, 15] Furthermore, if the "sparing action" of non-protein sources of energy is not adequate—that is, if these sources do not provide the full energy requirement of the body—protein is converted into energy rather than used for tissue synthesis. For example, Riegel and co-workers[9] found that in the immediate postoperative period a daily intake of 130 gm. of protein and 2,000 calories was needed for positive nitrogen balance.

As previously indicated, the usual regimen of parenteral nutrition does not provide sufficient calories; the parenteral administration of amino acids, therefore, has not proved to be an adequate method of maintaining protein requirements. For effective use, amino acids must be given in a solution with 10 to 15 per cent dextrose. Three liters of such solution with 5 per cent amino acids would approach the recommended intake of protein and calories. As such a solution is hypertonic, and as amino acids must not be administered at a rate faster than 50 gm. in four hours, the solution must be given very slowly. These factors greatly limit the usefulness of parenterally administered amino acids. However, in view of the well-documented need for individual amino acids in a variety of important metabolic functions other than protein synthesis, it would seem that when parenteral nutrition is needed for more than two or three days, at least 50 to 100 gm. of amino acids per day might well be added to the nutritional regimen.

Vitamin requirements. It is unnecessary to give vitamin preparations routinely after operation, although such supplementation is of course advisable both before and after operation if there is evidence of preoperative deficiency. Vitamins should also be given during convalescence complicated by mal-

nutrition. by decreased utilization of vitamins, by acceleration of metabolism as in fever and infection, or by reaction to stress.

Normal losses of water-soluble vitamins are increased by the diuresis that follows administration of parenteral fluids. The recommended daily postoperative doses of the most important of these vitamins are: thiamine (B_1), 5 to 10 mg.; riboflavin (B_2), 5 to 10 mg.; nicotinic acid (niacin), 50 to 100 mg.; ascorbic acid (vitamin C), 100 to 250 mg. As the loss of water-soluble vitamins in the urine is considerable when they are administered intravenously. it is preferable to inject them intramuscularly or subcutaneously if they cannot be taken by mouth.

There is much evidence that vitamin C has a special biochemical function in the reaction of the body to stress such as toxic infection, fever, burns and other trauma. It is also directly involved in the healing of wounds. In certain cases, therefore, a daily intake of 500 to 1,000 mg. of vitamin C may be indicated.

Deficiencies in fat-soluble vitamins are to be expected if there is any defect in fat digestion or absorption. Most important in this regard is a deficiency of vitamin K, which leads to hypoprothrombinemia with consequent delay in the rate of blood clotting. In this condition it is necessary to raise the prothrombin level to at least 60 or 70 per cent of normal. Vitamin K should be given intramuscularly both before and after operation, usually 4 mg. daily. It should be remembered that vitamin K deficiency is not always accompanied by jaundice.

When nutrition is limited to parenteral feedings or when the food intake is restricted for a long time, it is probable that, in addition to the vitamins already recommended, vitamin A (5,000 to 10,000 units), pyridoxine (B_6) (2 mg.) and pantothenic acid (20 mg.) will be needed daily.

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Cytologic Detection of Cervical Cancer

Four Years' Experience with Routine Smear Examination in Private Practice

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• *Simplified Papanicolaou smear techniques appear to be adaptable to private clinical practice when experienced cytodetection laboratory facilities are available. A private physician's office seems potentially an efficient, economical and practical place for detection of cervical cancer by use of the smear technique as a routine part of examination of patients.*

In a series here reported upon, examination of 11,207 cervical smears taken at the first examination of patients of all ages led to diagnosis of unsuspected malignant disease in 80 cases—in all instances at a stage when it should be easily curable. Cancer was not detected in examination of 6,060 smears taken later from women who had had a "negative" smear at the time of first examination, which seems to indicate that the first screening was reasonably accurate.

In a few cases, early cancer was detected when smears were reported as "atypical" or "suspicious." Such reports demand as careful follow-up as do "positive" reports.

There are dangers and limitations in widespread clinical application of screening by this method. Care must be observed in the development of programs for its use lest the potential benefits in early detection be outweighed by the dangers from misuse.

BETTER CONTROL OF CERVICAL CANCER still depends primarily on earlier detection. The publication in 1943 of the well known Papanicolaou and Traut[12] monograph on vaginal smears seemed to give promise of widespread early detection. Since then, many research center[1-3, 5-9, 13] and several cancer detection centers[4, 10] have reported a high degree of success in early cancer detection using various modifications of the original Papanicolaou-Traut technique. Yet population screening with this method is still not generally available. Economic and technical obstacles, shortage of trained cytologists and valid fears of misuse have limited the use of this means of detection. Cervical cancer remains a disease which, more often than not, is already lethal by the time it is diagnosed. A method of control seems at hand, yet practical techniques for widespread application of this method have not been fully worked out.

The study herein reported upon was started nearly four years ago in an effort to adapt the use of Papanicolaou smears to private clinical practice and then to test the private physician's office as a cervical cancer detection center. It seemed reasonable that every physician's office where women are accustomed to go should be the most available and economical cancer detection center. Accordingly, attempt was made to devise and to test a procedure of technician screening that would be simple and convenient enough for any physician to use, economical enough to pay its own way in private practice, yet accurate enough to detect unsuspected cervical cancer in a high proportion of cases.

Last year a preliminary report was made on the early development of this program, the details of the simplified technique, and the number of unsuspected cases of cancer detected in a series of 7,530 smears.[11] From the preliminary study it was concluded that when adequate laboratory facilities were available the office of a physician in private practice could be a practical center for screening for cervical cancer. The system used was economically satisfactory to both physician and patient. With the simplified technique that was used, unsuspected intra-epithelial or early invasive cancer was detected in 43 women observed in private practice. In all instances the lesion was at a stage when it should be easily curable. All adult age groups were represented. It was further observed that routine smears on all women, regardless of age or complaint, produced as high a yield as occasional smears taken "when indicated by age or the appearance of the cervix."

The study has grown since that report and now includes for detailed analysis 17,267 smears from more than 11,000 private patients who are representative of the adult female population of San Diego

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County in all but the lowest economic brackets. Eight collaborating gynecologists who are members of the Gynob Clinical Group but practice individually, now routinely obtain smears of material from the cervix of all patients the first time they examine them, and all patients are urged to have smears taken annually thereafter.

The technique used has remained essentially as previously reported. Without previous preparation and without regard for recent douching, an ordinary tongue blade is used to scrape the region of the external os. Collected material is spread thinly on a slide which is dropped wet into ether and alcohol, then later sent to the laboratory. This step in a routine pelvic examination takes but a moment, but during that moment the patient is told: "This is a routine test for cancer. It applies to the cervix only. It should be repeated annually." Later, if the smear is "negative" a form note is sent from the physician's office to the patient, reporting that the smear gave no evidence of cancer of the cervix and again stressing the limits of relative protection: For the cervix only and for a year only. A charge of $3.50 per slide brings the test within the reach of practically every patient and yet is enough to cover the laboratory cost with the present volume.

In the laboratory of the Gynob Clinical Group the smears are stained and examined by specially trained technicians, who classify them as "negative," "atypical," "highly atypical," "suspicious," or "positive." These classes correspond to Papanicolaou classes I, II, III, IV and V, but the terms were chosen because they seem to be more suggestive to clinicians receiving the reports. Slides in the last three classes are reexamined by a physician cytologist. In any case in which the slide is confirmed as highly atypical, suspicious or positive, biopsy specimens are taken from several sites or conization with a scalpel is carried out. For smear screening the authors have coined the term *cytodetection* as preferable to *cytodiagnosis*, since in all cases diagnosis is made by a certified pathologist from tissue preparations, not smears. Treatment is never started until a diagnosis has been made by biopsy.

In the interest of practical efficiency the original practice of making three slides for each patient was abandoned. At first, material was obtained by vaginal aspiration, by cervical scraping and by swab from the cervical canal. It was found, however, that an experienced technician could process about 600 slides a month and that making three slides for each patient barely affected the number of cases detected, yet reduced the technician's capacity to 200 patients per month. Also, it trebled the cost per patient. Since the principal yield in detection of unsuspected cancer comes from cytologic examination of material from patients not previously examined, study of single slides of material scraped from the cervix in 600 cases will detect almost three times as many cancers as study of three slides from each of 200 patients. Moreover, it was observed that endometrial cancer was not consistently detected by examination of material aspirated from the vagina or swabbed from the cervical canal. Fortunately, endometrial cancer usually causes abnormal bleeding which leads to curettement and diagnosis before a lethal stage has been reached. For cervical cancer, on the other hand, it is felt that examination of smears is more accurate than random biopsy, for an early lesion often is not visible and tissue excised for biopsy may be taken from the wrong place to detect it.

Gradually, as experience has widened, series of smears beyond the first have been accumulated in a number of cases, which serves as a check on the accuracy of the original screening. Demand for "cancer detection smears" seems to be growing among women in San Diego. Other local physicians are taking smears and other laboratories are reporting on them. Since not only great benefits but also dangers, limitations and pitfalls are apparent, the authors take this opportunity to review their now widened experience and appraise the results, good and bad.

RESULTS IN A 4-YEAR PERIOD

In a period of four years, 17,267 smears of material scraped from the cervix of patients observed in private practice were examined. Of that total, 11,207 were from women who had not previously had examination of smears, and in 112 cases cancer was detected by the cytologic examination. In 80 of those cases, cancer was not suspected until the slides were examined; and in 74 of the 80 the growth was intra-epithelial, in 6 in an early invasive stage. In 25 of the detected cases, cancer was suspected on the basis of clinical observations or was known to be present at the time the smear was taken, and in all those cases in which there were clinical manifestations the growth was invasive. In seven cases the cancer was adenocarcinoma of the fundus of the uterus. The other 6,060 slides were annual repeat smears from women who had had at least one previous smear examination, and cancer was not found in any case.

In the entire series there were 26 cases in which the slides were reported as positive for cancer which was not confirmed by biopsy ("false positive") although in many of these cases basal cell hyperplasia explained the abnormal smears. In two cases there were "false negative" reports, which will be discussed later.

As has been said, all patients are urged to have a smear examination each year. In four years many

TABLE 1.—*Atypical and suspicious smears—false positives and false negatives*

Smear Report	Lost to Follow-Up	Neg. Biopsy (False Positive)	Leukoplakia or Dyskeratosis	Preinvasive Unrecognized	Invasive Unrecognized	Invasive Recognized
Neg. (I-II)				1	? 1	
Highly atypical (III)	4	4	9	5		0
Suspicious (IV)	7	5	9	9	1	2
Positive (V)	9	7	19	60	5	23

patients had two, three or four. The fact that in 6,060 such examinations there has been no "positive" finding when the original result was "negative" seems an important confirmation of the accuracy of the initial screening. If many cancers were being missed on the first smear, certainly a few "positives" would show up in more than 6,000 repeat smears taken a year or more later. The authors are beginning to doubt that even an annual smear examination is necessary once there is "negative" finding. Perhaps the interval could safely be extended to two years or more.

A few patients who had "suspicious" or "positive" smears were not examined further by the authors, owing to their moving away from the area or switch to other physicians. Included among them were five who had "positive" smears and on whom deep cervical cauterization was carried out at the time of the original examination. Subsequent follow-up by smear and biopsy gave no evidence of cancer. Undoubtedly, unrecognized intra-epithelial cancer often is cured by ordinary cautery. Since this observation was made early in the study, the authors now rarely cauterize the cervix before a smear is reported as "negative."

In a number of cases in which smears were reported as "suspicious" or "positive," no evidence of malignant change could be found in biopsy specimens. Careful and prolonged observation is indicated in such circumstances. In 18 cases "atypical," "suspicious" and "positive" smears led to detection of basal hyperplasia or dyskeratosis (Table 1) which is thought by some investigators to be precancerous or a precursor of intra-epithelial cancer which is to develop later.

Of greatest importance in smear screening is the "false negative"—cancer missed by smear examination. In the present series this is known to have occurred in one case, and probably in another. In one of those cases the smear was reported as "slightly atypical." Curettement and conization were done on clinical indications and intra-epithelial carcinoma was diagnosed by biopsy. On review, the smear was classified as "suspicious." In the other case, six months after the patient had a "negative" smear on the first visit it was reported from another city that she had early invasive inverting cervical cancer. There were no other known instances of "false negative."

In several cases smears that were "atypical" and "suspicious" rather than "positive" led to detection of preinvasive cancer, and in one instance to detection of early invasive cancer whose presence was not previously recognized. It is now felt, therefore, that biopsy should be done when smears are reported as atypical or suspicious as well as when they are classified as positive.

In ten cases in the present series carcinoma of the fundus of the uterus was diagnosed; it was detected by smear examination in seven cases and missed by that method in three. The presence of the disease was suspected clinically in all the cases, owing to abnormal bleeding. It would appear that cervical smears alone should not be relied upon for detecting fundal carcinoma.

LIMITATIONS AND DANGERS

With increasing use of the smear technique, not only by the Gynob Clinical Group but by other physicians as well, some of the limitations and dangers of use of the method by physicians in private practice have become apparent. Women hear of the "cancer detection smear" and often request it from physicians who are not prepared. Inexperienced study of smears may result in false security and continued growth of cancer from a curable to an incurable stage. Smears must not replace biopsy for diagnosis of suspicious lesions.

In a case observed by one of the authors, adenocarcinoma was suspected clinically but the report on a smear was "negative" and inadvertently a report to that effect was sent to the patient. Thus, with false security, she did not keep an appointment for curettement and for a time could not be traced. Treatment was delayed two months.

It is known that in some instances physicians advised hysterectomy solely because of a "suspicious" smear. On the other hand, some patients who did not have cancer but who had smears reported as "suspicious" or "positive" suffered severely from cancerophobia before the ultimate diagnosis was reached.

DISCUSSION

It is difficult to estimate the number of cases in the present series in which the life of the patient was saved by the results of cytologic examination, for in most instances the lesion was intra-epithelial

and the complete life history of intra-epithelial cancer is not known. However, it seems reasonable to believe that by detection of unsuspected yet easily curable cancer in 80 cases, a number of lives must have been saved. Added to this obvious benefit is the peace of mind of more than 11,000 women from 17,000 "negative" reports.

To the authors, the taking of smears has become so much a part of routine examination of patients when they are observed for the first time that it would seem difficult to do without them. After four years the entire program as here outlined is more satisfactory than ever. On the other hand, any such screening program must be developed with care and caution. The potential benefit is so great that premature misuse must not be permitted to bring discredit to the method.

One valid obstacle to screening of the population in general in research centers and in cancer detection centers has been the high cost per detection. However, in the authors' experience with the screening method as adapted to use in private practice, the cost is all willingly borne by the patients, with rare exceptions. The value to any woman of a negative report seems to be equal to the small cost. Therefore, when an occasional smear is reported as "positive" and cancer is detected, the cost per detection is the present cost of preparing and examining one slide: $3.50.

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CASE REPORTS

- **Appendiceal Stones Simulating Ureteral Calculi**
- **Fat Emulsions as Dietary Supplement**
- **Electrocardiographic Changes Occurring with Trivalent Antimony Compounds During Therapy of Schistosomiasis**

Appendiceal Stones Simulating Ureteral Calculi

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Reports as to the incidence of calcified stones in the appendix vary widely. Bunch and Adcock[1] observed only one case in 2,000 patients with appendicitis. Steinert[5] noted appendiceal calculi in ten of 104 patients who had appendectomy; and in seven of the ten cases the diagnosis was made before operation. More recently Felson and Bernhardt[2] reported ten cases among 300 in which appendectomy was done. The importance of early correct diagnosis of the condition was emphasized many years ago by Murphy,[3] who noted that perforation occurred quite early in the course of obstructive appendicitis and reported the occurrence of perforation in half of the cases in one series of patients with obstruction.

Although appendiceal stones may have certain radiographic features that help to distinguish them, differentiation from ureteral calculi is not always easy. The similarity of symptoms and radiographic appearance has been commented on since 1908.[4] Felson and Bernhardt outlined several helpful radiographic features of appendiceal stones: (1) They are usually single, and almost always laminated. (2) They are usually over 1 cm. in diameter. (3) In stereoscopic views or in films taken in various oblique positions, they always appear close to the cecum; and they may be in a position that is obviously outside the course of the ureter.

These features, in addition to the history, will usually distinguish appendiceal from ureteral stone. In the case herein reported, however, the symptoms were those of ureteral colic and the appendiceal stones observed at operation did not have the usual characteristics. Radiographically they were not laminated, they were less than 1 cm. in size, and they were directly in the course of the distal right ureter. An excretory urogram was required to make certain they were not in the urinary tract.

CASE REPORT

A white woman 39 years of age was admitted to hospital in severe pain that had begun about seven hours previously as severe cramping pain in the right upper quadrant of the abdomen. The pain radiated into the epigastrium and was shortly followed by nausea and vomiting. After about an hour and a half the pain eased and the patient drove a car to take her husband to work. Approximately 20 minutes later she had a normal bowel movement. Two hours later she was found lying on the floor doubled with pain which continued until admittance to hospital. The pain was described as colicky in nature, coming in waves, and rapidly building to a peak intensity. It slowly became less severe but never abated completely. The pain was localized to the right of the umbilicus, did not cross the midline or radiate into the flank or groin. The patient vomited many times before admittance and this did not affect the pain. There was no history of hematuria, dysuria, pyuria or urgency, of chills or fever, or of passing pus, blood or mucus by rectum. The last menstrual period had occurred two weeks previously and had lasted the usual four days with the normal amount of flow.

When examined the patient was pale, sweating and doubled with extreme pain in the right side of the abdomen. The pulse rate was 108 per minute and the blood pressure was 120 mm. of mercury systolic and 86 mm. diastolic. There was generalized muscular rigidity over the abdomen, with tenderness most pronounced at McBurney's point. Extreme rebound tenderness was referred to the right lower quadrant from all quadrants of the abdomen. No masses or organs were palpable. Peristalsis was absent. Upon pelvic examination the uterus was observed to be small and anteflexed. Except for bilateral tenderness no abnormality was noted in the adnexae. The cervix was somewhat cystic. Bilateral tenderness was noted on rectal palpation.

A specimen of urine taken by catheter was clear and alkaline with a specific gravity of 1.023. It contained no albumin and no sugar. Four to six pus cells per high power field and occasional squamous epithelium cells were noted in microscopic examination of the urine. Erythrocyte content of the blood was 4.2 million per cu. mm. and the hemoglobin value was 86 per cent. Leukocytes numbered 22,300 per cu. mm.—78 per cent polymorphonuclear cells, 19 per cent lymphocytes and 3 per cent monocytes.

In a roentgenogram of the abdomen minimal ileus of the small bowel and the presence of gas in the colon were noted. Within the pelvic brim there were two non-laminated calcifications on the right side, one of them 4 mm. and the other 6 mm. in diameter. By intravenous pyelography it was observed that the calcifications were outside the course of the right ureter (Figure 1). A diagnosis of appendicitis with perforation and spreading peritonitis was made.

A right perirectus incision was made in the abdomen and when the peritoneum was opened free pus was observed between all loops of the small intestine. The appendix, which lay mesial to the cecum, was gangrenous and ruptured at the lower one-third. The larger calcification protruded through the opening in the appendiceal wall and when the appendix was lifted from its bed the calculus fell into the surgeon's hand. The smaller stone was palpable in

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Figure 1.—Portion of the intravenous pyelogram showing relation of calculi to dye-filled ureter (arrow) within the pelvis.

the lumen of the appendix. The appendix was removed in the routine manner. One million units of aqueous penicillin G and 1 gm. of streptomycin were instilled into the peritoneal cavity. The incision was closed without drainage. Continuous gastric suction was applied and the patient was given fluid and antibiotics intravenously. Recovery was uneventful.

The appearance of the calculi in a roentgen film made of them after removal was identical with that seen in the preoperative roentgenograms. Sectioned, the stones were observed to be of laminated crystalline-like structure, yellow in color, and fairly homogeneous throughout.

SUMMARY

A case is reported in which appendiceal calculi simulated the roentgen appearance and the symptoms of ureteral stones. By intravenous pyelography it was determined that the stones lay outside the course of the ureter. Appendectomy was carried out and the stones were found in the appendix.

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Fat Emulsion as Dietary Supplement

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ALTHOUGH FAT is a satisfactory source of energy to supplement inadequate nutrition without supplying too much bulk, since it contains 9 calories per gram as opposed to 4 calories per gram of protein or carbohydrate, many fat diets are unpalatable and produce a feeling of fullness.

Van Itallie and co-workers[2] reported that fat emulsion as a food was well tolerated and assimilated by normal persons and that nitrogen and potassium deficits were overcome as a result of increased fat intake.

Forbes and Swift[1] observed that the specific dynamic action of any diet is affected by the proportions of protein, fat and carbohydrate it contains and that the high specific dynamic action of protein is retarded more by fat than by any other concomitant nutrient. Thus the caloric efficiency of a diet is considerably improved by the addition of fat, which reduces the loss of energy in utilization.

Four cases are here reported in which diet was supplemented with fat emulsion. The preparation used* is palatable and acceptable because of the small size of its particles. It is readily absorbed and utilized by both adults and children. Containing 40 per cent fat and 10 per cent glucose, it has 4 calories per milliliter, or 120 calories per ounce.

In each case urine specimens were taken every 24 hours and were pooled for analysis at 72-hour intervals. Nitrogen intake was estimated from the protein content of the diet. Urinary nitrogen content was determined by the Kjeldahl method.

CASE 1: A 22-year-old unmarried white woman was admitted to hospital with the chief complaint of loss of 40 pounds in weight and amenorrhea for the past five years. Menstruation had begun at the age of 15 years and had been regular. At the age of 16 the patient began to overeat and attained a weight of 135 pounds. A year later the weight declined to 120 pounds (it was estimated that the weight should have been 125 pounds) and amenorrhea developed. After treatment with vitamin injections and desiccated thyroid there was some gain, but after the patient completed high school the weight again began to decline, this time to 110 pounds, and the decline continued despite medical treatment. The patient began to work as a file clerk. During the five months before admittance to hospital the weight declined from 106 pounds to 85 pounds. At a clinic a diagnosis of anorexia nervosa was made and the patient was referred for psychiatric treatment, which after two visits she refused to continue. Another physician then admitted her to hospital for treatment of malnutrition.

On physical examination, although the flesh was observed to be wasted, there was no muscle weakness. The breasts were well developed and pubic and axillary hair were normal. The blood pressure was 106 mm. of mercury on systole and 74 mm. on diastole.

Erythrocytes numbered 4,650,000 per cu. mm. The hemoglobin value was 82 per cent. Leukocytes numbered 10,700 per cu. mm.—64 per cent polymorphonuclear cells and 42 per cent lymphocytes. Blood cholesterol content was 261 mg. per 100 cc. The number of eosinophils was not reduced after administration of corticotropin (Thorne method). The non-protein nitrogen content was 29 mg. per 100 cc. The glucose tolerance curve was low and flat.

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*Lipomul—oral was supplied gratis by the makers, Upjohn Company, Kalamazoo, Mich.

TABLE 1.—*Effect of addition of fat emulsion to diet of patient (Case 1)*

Period of Observation	Weight (lbs.)	Calories Added Daily to 2500 C. Diet in Fat Emulsion*	Nitrogen Ingested (gm. per day)	Urinary Nitrogen* (gm. per day)
1- 3	92½		14.4	14.9
4- 6	92½		14.4	14.0
7- 9	90	720	14.4	17.8
10-12	90	720	14.4	7.9
13-15	92	720	14.4	10.1
17-19	93½	720	14.4	12.6
22-24	94½	1,080	14.4	13.9
29-31	95½	1,440	14.4	9.0
33-35	99	1,440	14.4	12.8
42-44	103½	1,440	14.4	16.6

*Average for 24 hours derived from 72-hour determination.

The urine appeared normal. The urinary excretion of 17-ketosteroid was 1.8 mg. in 24 hours (normal for adult female, 5 to 15 mg.). No result was obtained by assay for urinary gonadotropin at 5, 50 or 100 mouse units (normal, 5 to 50 mouse units).

A diagnosis of Simmond's disease had been considered, but the final diagnosis was anorexia nervosa.

A diet rich in proteins with an average daily content of 2,800 calories was given for a month. Vitamins were injected intramuscularly every day and corticotropin and cortisone were administered separately. During the month the weight varied from 85 to 90 pounds; at the end of the month it was 87 pounds.

For the next 44 days the daily caloric intake was maintained at 2,500 calories and the daily protein intake at 90 gm. Protein retention was estimated from determinations of urinary nitrogen (Table 1). After a control period fat emulsion was added to this diet without increase in protein. The weight increased and excretion of nitrogen in the urine decreased to a new level of equilibrium.

As the intake of the fat emulsion was further increased, the urinary nitrogen declined further and then rose to a new level of equilibrium. The fat emulsion diet was continued for 40 days more. On discharge the patient weighed 113 pounds and the basal metabolic rate had increased from minus 47 to plus 19.

The fat emulsion had at first caused a sense of epigastric fullness, and when taken between meals had reduced the appetite for the next meal. The emulsion was therefore given immediately after the meal; in several days the patient became accustomed to this supplement and tolerated it well.

Case 2: A 21-year-old white student nurse had had little appetite for several weeks because of depression over problems at home. Her weight had declined from 130 pounds to 112 pounds when she was accidentally scalded with hot coffee, incurring first and second degree burns. She was admitted to hospital. The injuries aggravated the depression and anorexia, and the patient was given a diet of 1,950 calories including 90 gm. of protein. After a control period she was given 2 ounces of fat emulsion after each meal; 18 days later the supplement was increased to 3 ounces.

Nitrogen ingestion was estimated at 14.4 gm. per day. Urinary nitrogen excretion, which was 10.8 gm. per day during the control period, dropped to 4.0 gm. per day 24 days after the fat supplement was begun. It continued to decrease, while the patient's weight increased to 120 pounds.

In this case the emulsion was given without a vehicle. The patient at first complained of a sense of epigastric fullness and some nausea but later became accustomed to the emulsion and tolerated it well.

Case 3: A 43-year-old white woman, after several years of treatment for menorrhagia, underwent hysterectomy and oophorectomy. Later gastric resection was done for chronic peptic ulcer. At the time of admittance for the latter operation the patient had been underweight for several weeks, and after the operation the weight decreased further. She was unable to eat more than a diet of 1,800 calories per day with 90 gm. of protein.

Fat emulsion was given, 2 ounces three times a day, at first in a milkshake between meals. This supplement caused a feeling of fullness so great that the patient had little appetite for the following meal, and it was therefore given immediately after meals. Later the fat emulsion was given without the milkshake. Ultimately it was well tolerated.

The patient's urinary nitrogen excretion decreased by 50 per cent during the period of observation. An increase of a few pounds in weight was maintained. Later the patient took a diet of 2,500 calories, supplemented by the fat emulsion, and made further gains in weight.

Case 4: A 50-year-old white man was given fat emulsion supplement from the twelfth day after gastroenterostomy for duodenal ulcer with complete obstruction. The urinary nitrogen excretion decreased progressively while the body weight gradually increased. The patient tolerated the fat emulsion very well.

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The author extends his thanks to Harold A. Harper, Ph.D., for advice and technical assistance in the studies here reported and to James J. McGinnis, M.D., Roy Pasqualetti, M.D., and James J. Raggio, M.D., for their cooperation in the treatment of patients.

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Electrocardiographic Changes Occurring with Trivalent Antimony Compounds During Therapy of Schistosomiasis

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Two patients with schistosomiasis japonicum recently treated with potassium antimony tartrate at Veterans Administration Hospital, San Francisco, had serial T-wave alterations similar to those seen in myocardial ischemia or myocarditis. Although they were closely observed no significant cardiovascular abnormality was noted in these patients during the course of therapy. As it was not known by the author that electrocardiographic changes of the kind noted may take place during administration of trivalent antimony compound, they were interpreted as indicative of serious disease. Since tropical diseases are not common in this area, the side effects and toxic reactions of specific therapy for these illnesses are not well known locally—a shortcoming that would seem to warrant a review of the studies

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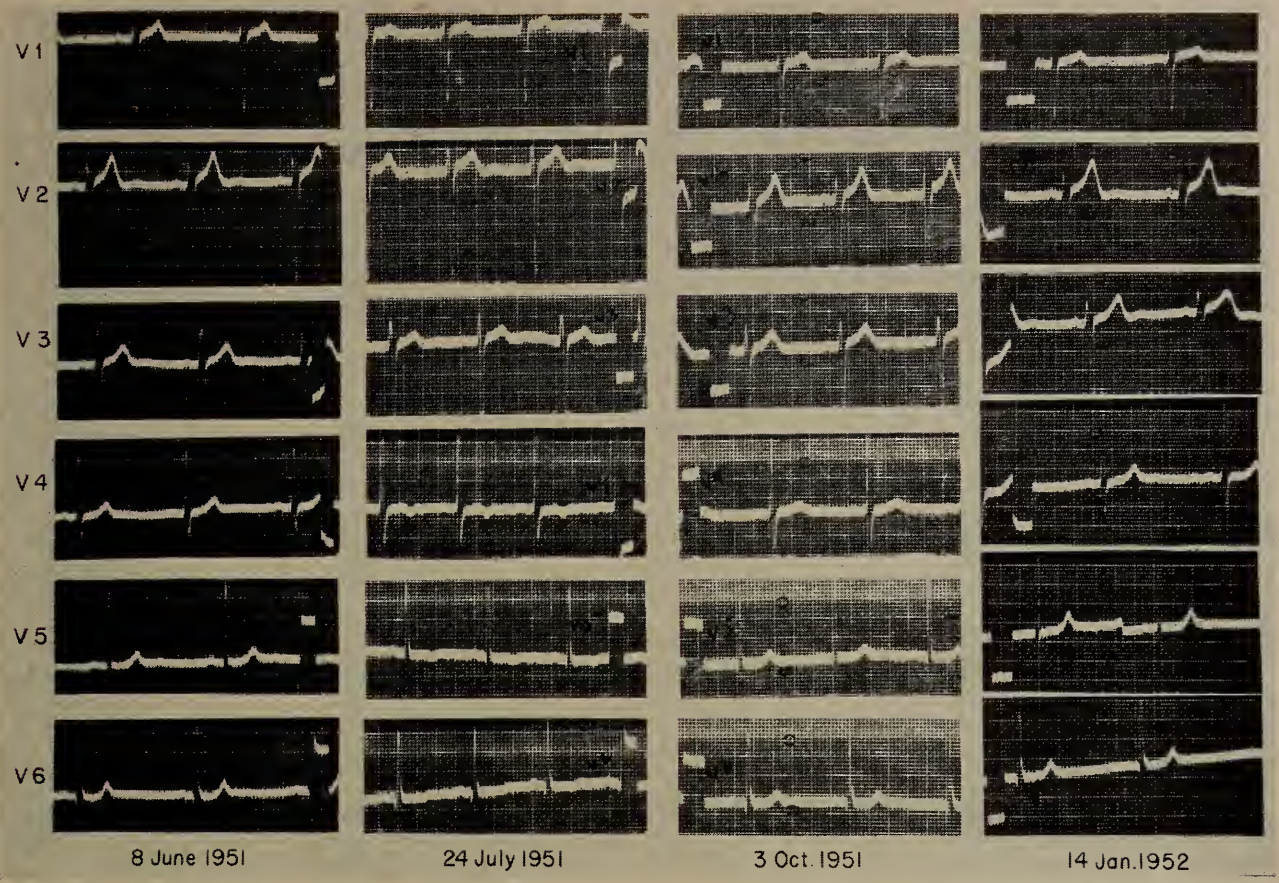


Figure 1.—Serial tracings of the precordial leads (Case 1) showed the most pronounced lowering and inversion on the thirty-third day of treatment, after the patient had received a cumulative total of 2 gm. of potassium antimony tartrate. Complete return of the T-waves to pretherapy status was noted on a tracing taken six months later.

done by Mainzer and Krause[1] and Tarr,[3] particularly since an increase in the incidence of such cases seems likely.

Before World War II the problem of schistosomiasis was distinctly foreign to the United States. Then about 1,500 known cases of schistosomiasis japonicum developed in United States military and civilian personnel who occupied Leyte. In addition, approximately 2,000 United States prisoners of war taken by the Japanese forces were quartered at Davao on Mindanao, a known focus of schistosomiasis. Only a dozen cases of schistosomiasis haematobium, and none of mansoni, occurred in American troops during World War II.[2] With extensive civilian travel and the presence of United States armed forces in endemic areas of the Orient and Near East an increasing number of cases is likely to appear.

Although thus far the majority of patients have been treated at Veterans Administration or military hospitals, it is probable that henceforth a number of cases will be diagnosed and the patients treated at other medical institutions.

Treatment with trivalent antimony compounds as outlined herein has not cured the disease in all cases. According to Most,[2] treatment failures with full courses of Fuadin® have been 50 to 80 per cent and with tartar emetic 15 to 25 per cent. Patients who have been treated may be asymptomatic for many years and then, upon recrudescence, be treated at other than governmental institutions.

Several specific factors probably contribute to the number of patients recently observed at Veterans Administration hospitals.

1. Natural course of the disease. The majority of the inadequately treated and the asymptomatic untreated patients may eventually have the late clinical manifestations such as unexplained emaciation, anemia, hepatomegaly, splenomegaly, pulmonary fibrosis, disorders of the nervous system, and urinary symptoms.

2. Stool survey. Dr. Harry Most supervised a study of specimens of stools of the armed services personnel who had been stationed in the endemic areas of the Far East at any time during World War II.

3. Diagnosis by rectal biopsy. During the late stages of the disease stools may be negative for ova but a rectal biopsy may be positive.

The electrocardiographic changes noted by Mainzer and Krause during treatment with the trivalent antimony compounds were T-wave alterations, prolonged Q-T intervals, P-wave changes, and bradycardia. Mainzer and Krause stated that in exceptional cases intoxication of the heart muscle might lead to heart failure and death, "probably through auricular fibrillation,"* but observations reported by Tarr and by Most do not agree with that view.

Tarr reported upon 141 patients followed with electrocardiograms (mainly standard leads) during therapy with tartar emetic or Fuadin. In the majority of cases, T-wave changes were the most prominent aberration; in 20 per cent of cases there were prolonged Q-T intervals; in only four cases were there negative or isoelectric P waves in leads 2

*In this quotation from the conclusion of the article written by Mainzer and Krause, the word *auricular* probably was used by mischance, since the authors spoke of *ventricular* fibrillation in the body of their article.

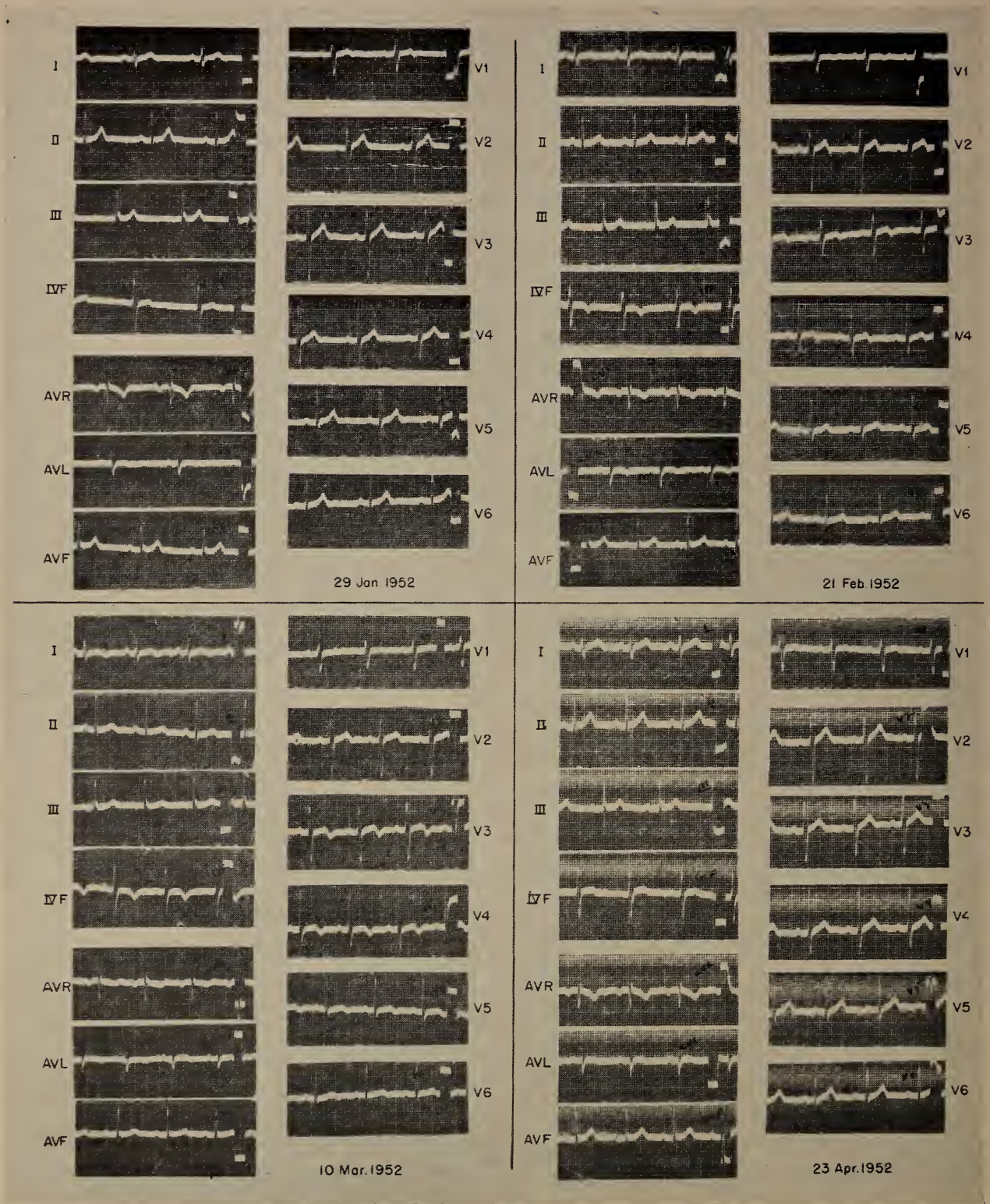


Figure 2.—Serial electrocardiograms showed changes of the T-waves in leads I, II, IVF, V_3 to V_6 after the patient had received a cumulative total of 0.44 gm. of potassium antimony tartrate. These changes were more pronounced 18 days later after the total amount of the drug had reached 1.80 gm. An electrocardiogram six weeks after cessation of therapy was the same as before therapy was begun.

and 3; bradycardia was not significant. These T-wave changes were noted sometimes in a single lead, but most often in more than one. In some cases there was only a decrease in amplitude, in others inversion. The T-wave alterations varied from person to person and were not necessarily an indication of the dosage or the speed of administration of the drug being given to the patient. It was reported that aberrations of the T-waves were more likely to occur when tartar emetic was given than when Fuadin was administered, owing to the greater amount of free antimony compound in the

former. Some of the patients observed by Tarr had a lowering of the T-waves when as little as 10 cc. of a 6 per cent solution of Fuadin was given, whereas in others there were no changes in T-waves at any time in a full course of treatment, regardless of which drug was used. In most of the cases the T-waves reverted to normal within six to twelve weeks after therapy was stopped. There were no deaths from cardiovascular abnormalities that could be attributed to antimony compound therapy.

CASE REPORTS

Case 1. A man 30 years of age was referred in June, 1951, for treatment of asymptomatic schistosomiasis japonicum diagnosed by studies of fecal specimens. The patient had been a prisoner of war at Davao, Mindanao, during 1941-44. A bout of bloody mucoid diarrhea had occurred in 1943 and treatment with emetine had been given for two weeks. In 1946, following an episode of diarrhea, a private physician had treated him with "shots and tablets" for two months, presumably for amebiasis. The patient said he had not had diarrhea, constipation, melena or loss of weight recently.

The hemoglobin content of the blood was 15 gm. per 100 cc. Leukocytes numbered 8,600 per cu. mm.—51 per cent polymorphonuclear cells, 2 per cent stabs, 24 per cent lymphocytes and 13 per cent eosinophils. Eleven stool examinations were reported negative for ameba and Schistosoma. Three rectal biopsies also were negative. However, on the basis of the diagnosis on referral, treatment was begun.

The patient received injections of 0.5 per cent solution of potassium antimony tartrate on the following schedule:

Day	Cc.	Gm.
First	8	0.04
Third	12	0.06
Fifth	16	0.08
Seventh	20	0.10
Ninth	24	0.12
11th-47th (odd days only)	28	0.14
Total dosage		3.06

No untoward reactions occurred save for nausea and cough during injection of the solution. The pulse rate and blood pressure did not change following the injection. The patient did not complain of pain in the chest, shortness of breath or dizziness. Electrocardiographic changes were most pronounced on the thirty-third day of treatment when the cumulative amount of potassium antimony tartrate reached 2 gm. (see Figure 1). In an electrocardiogram made six months after cessation of therapy, T-waves were the same as they had been before treatment.

Case 2. A 38-year-old man was referred in January 1952 for treatment of asymptomatic schistosomiasis japonicum diagnosed by studies of fecal specimens. The patient had been a prisoner of war in the Philippines and Japan from May 1942 to September 1945 but he did not remember any serious attacks of diarrhea, abdominal pain, skin eruption or fever. Upon physical examination no abnormalities were noted and the patient appeared to be in excellent health.

The hemoglobin content of the blood was 14.6 gm. per 100 cc. Leukocytes numbered 6,550 per cu. mm.—49 per cent polymorphonuclear cells, 1 per cent banded forms, 43 per cent lymphocytes, 3 per cent monocytes and 4 per cent eosinophils. Thirteen fecal specimens were examined for ova and parasites. Although ova of hookworm and T. trichiuris were observed, none of Schistosoma japonicum were present. Tubercle formation and ova compatible with schistosomiasis were noted in biopsy of rectal tissue.

The patient received injections of 0.5 per cent solution of potassium antimony tartrate on a schedule similar to that followed in Case 1. The only symptom noted during the administration of potassium antimony tartrate was a brassy cough. There was no change in the pulse rate or blood pressure. The patient did not complain of pain in the chest, shortness of breath, palpitation, or swelling of the ankles. The electrocardiographic changes were most pronounced when the patient had received a cumulative total of 1.8 gm. of potassium antimony tartrate (see Figure 2). Six weeks later no abnormalities were noted upon physical examination, and x-ray films of the chest, an electrocardiogram and a ballistocardiogram were all within normal limits.

COMMENTS

The T-wave alterations in the two cases herein reported occurred without significant changes in the QRS complexes, Q-T intervals, P-waves, and S-T segments. The patient in Case 1 had bradycardia before and throughout therapy. Although the T-wave changes in both cases strongly suggested the possibilities of (1) coronary artery insufficiency, (2) pericarditis, (3) myocarditis, toxic or inflammatory, there were no clinical or laboratory findings to support diagnosis of any of those conditions in either case. Furthermore, all the T-waves reverted to pre-therapy status within the time required for antimony excretion.

SUMMARY

Two patients with schistosomiasis were treated with potassium antimony tartrate, and serial electrocardiograms showed alteration of T-waves during therapy. There were no clinical or laboratory data to indicate that the T-wave aberrations might be caused by cardiovascular disease. After therapy was discontinued, electrocardiograms returned to normal.

Thirteenth and Harrison Streets.

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California MEDICINE

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EDITORIAL

Unlawful Practice

PHYSICIANS IN CALIFORNIA have wondered for years why certain actions by unlicensed persons, which in their opinion constitute the unlawful practice of medicine, are not stopped. They often see various treatments and "cures" offered by persons whose training is at best dubious, and sometimes they are appalled by more grandiose medical care schemes established and operated by others than licensed physicians. Why can't this sort of thing be nipped in the bud and a fraud on the public prevented?

The answer, of course, lies in the legal statutes of the state and their interpretation by the courts.

The practice of medicine is defined in the Business and Professions Code of California and is limited in that code to those who are regularly licensed under other sections of the same body of law. Those who attempt to practice medicine without coming under the provisions of the Business and Professions Code are in actual violation of the law.

Such violations often come about when a person who is licensed to practice only a profession bearing faintest kinship to medicine attempts to work beyond the legal boundaries set up under the form of license he holds. And sometimes persons with no claim to training or licensure of any type, possibly professing to have "an old Indian secret," undertake —for a fee, of course—to treat human ailments.

More recently, violations of the medical practice act have come about through corporations which hold themselves out to the public as providing a medical care service through a closed panel of physicians who are regularly licensed. This form of corporate endeavor has been before the California courts on several occasions and the courts have consistently held that medicine, like lwa, may be legally practiced only by those who are regularly licensed. Several insurance companies have run afoul of this provision over the past twenty years and have been forced to discontinue supplying the services of a physician through an insurance policy.

A corporation transgressing the medical practice laws generally comes under the purview of one or another department of the state government and is brought to book by that department. On the other hand, an individual, licensed or not, may not be prosecuted unless the district attorney agrees to press the case. As might be expected, many district attorneys have passed over violations which to medical men are obvious but which, in the legal eye, may present undue difficulty of proof or may at the most constitute a nuisance of the misdemeanor variety.

New possibilities for prosecuting alleged violations of the medical practice act will be opened up next month, when a law passed by the 1953 State Legislature goes into effect. This law provides that ten or more licentiates of the Board of Medical Examiners may seek a court injunction to investigate and prohibit the unlawful practice of medicine. Superseding a local court decision which held that the right to seek injunctive relief lay only in the hands of the Board of Medical Examiners. this new law permits a group of physicians, acting under adequate legal safeguards to the accused, to bring injunction proceedings where, in their opinion, the practice of medicine is being undertaken illegally.

Now, for the first time, the medical profession will not be completely dependent on the examining board or on district attorneys to seek to abate unlawful practice. In cases where the elected or appointed officials are too busy or are for other reason reluctant to eliminate nefarious practices, a group of physicians may step into the picture and seek court relief.

The California Medical Association has been quick to provide for the use of this legal remedy. The Council has appointed a Committee on the Un-

lawful Practice of Medicine, a committee of 17 members which is charged with cooperating with other agencies to secure compliance with the medical practice laws. This committee is authorized to confer with public officials, to seek out and attempt to prohibit the unlawful practice of medicine and to use all available means of consultation, cooperation and persuasion in stopping those acts which are considered to be unlawful practice.

Failing in such endeavors, the committee is authorized to seek legal injunctions against such alleged illegal practices and to follow up with court action. The committee has been made adequately large to comply with the requirements of the new law and properly representative of both the official C.M.A. family and the geographical and population factors of California. It reports directly to the C.M.A. Council and will operate under the guidance and authority of that body.

The legal profession has had such committees for a number of years and has found them to be singularly effective in stopping the illegal practice of law. Now medicine has the same opportunity.

Here at last is the chance for medicine to put a stop to various forms of illegal medical practice, in cooperation with those public agencies which have previously been authorized to seek such legal relief. Here is the opportunity to deal cooperatively with public agencies, with the prerogative of taking further legal steps if such agencies do not agree to go to court in particular instances.

This committee is not expected to perform spectacular feats. It is not expected to revolutionize any existing conditions or seek to inflict unusual punishment on those who may be violating the medical practice laws. Rather, it is expected to bring about an orderly compliance with the laws of the state and to exert its influence by access to courts where lesser measures fail. Its results should provide better safeguards, in the public interest, against illegal medical practices which may encompass fraud, misrepresentation and quackery.

Trouble in Paradise?

Mr. Joseph T. DeSilva, a man who confesses to many talents and who is at present the executive secretary of the Los Angeles Retail Clerks Union Local 770, will probably be the least surprised of all our readers to find himself the author of this "Guest Editorial."

Writing in *The Voice of 770*, Mr. DeSilva makes some valuable contributions to the history of panel practice plans. His remarks should be of more than passing interest to any employee group contemplating the purchase of a health plan. Physicians can be of assistance by calling Mr. DeSilva's words to the attention of persons contemplating the interruption of the personal patient-physician relationship and thereby becoming captives in a panel scheme.

Step in, Mr. DeSilva:

"Because of the transition from the initial Permanente operations to the expanded services in conjunction with the new hospital, we are very well aware that some inconveniences have occurred. For instance, the long waiting period for appointments—a problem which is now being reduced systematically. Another, the waiting period for elective surgery (when a person chooses to have surgery performed when it could wait). The inadequacy of the house call procedure. The strain under which the doctors have been working. The hastily put together nonprofessional staff.

"At each week's meeting between Permanente and executive office personnel of the Union, these problems are being ironed out. We will eventually be 'on top' of the situation, anticipating the problems rather than settling crises.

"PLAN ABUSED

"While we have now slapped ourselves on the wrist, all of the problems are not due entirely to Permanente failure to predict the future nor the Union's short vision. At least a substantial part of the blame is caused by the many members who abuse the plan. Their impatience causes friction. They request house calls for ordinary matters which could be handled by themselves. They possess no regard for time and engage in lengthy telephone conversations explaining to the nurse all the facts that should be told to the doctor, tying up the switchboard for other calls which may very well be emergencies. They make appointments and do not show.

"The 'no shows' are the worst. Others lose out because the doctor and nurse have turned down other appointments to reserve their time for a person who turns out to be a 'no show.'

"CONSTRUCTIVE CRITICISM

"Because it is the popular thing to do, the easiest way to get out of any situation, we have fallen into the same groove of the national and world pattern of building hatred through criticism in order to hide our own shortcomings. So if criticism must be

done, let it be in the form of constructive suggestions.

"But we have painted a dark picture. All is not as black as pictured, for each day the situation grows brighter. Nothing is being neglected; everything that can be done is being done to make your health plan a joy for every member.

"Are you one of the lucky ones who did not have to call a doctor? We hope you stay that lucky."

Since Mr. DeSilva is our guest we must, perforce, refrain from drawing any conclusions from his dissertation on the travails of a union agent attempting to invade the field of medicine. Courtesy indicates we say only:

"We, too, hope you stay *that lucky* — Mr. DeSilva."

[Reprints of the above in circular form are available in any quantity to C.M.A. members. Requests should be directed to the *Public Relations Department*, California Medical Association, 450 Sutter, San Francisco]

LETTERS to the Editor . . .

Hand Talking Chart

April 20, 1953

While in a right hemiplegic complete aphasic condition, I evolved the "Hand Talking Chart." I have been distributing the chart with the cooperation of the editors of medical publications. It is estimated there are 400,000 aphasic persons in this country.

Readers may have copies of the chart, gratis.

Sincerely yours,

Hamilton Cameron

601 West 110th Street
New York 25, N. Y.



HAND TALKING CHART. The sign language in the designs speaks for itself. The figures and letters across the bottom are independent of the designs. By pointing with pencil or finger to the letters or figures needed to further a conversation, communication between patient and friend can be amplified even to the "dictation" of a letter by the patient who otherwise would remain completely inarticulate.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

C. M. A. House of Delegates Proceedings

Los Angeles, May 24-28, 1953

Sunday Morning Session

The Eighty-second Annual Session of the California Medical Association convened in the Renaissance Room of the Biltmore Hotel, Los Angeles, California, Sunday, May 24, 1953, at 9:50 o'clock a.m. The meeting was called to order by Speaker Donald A. Charnock, who presided.

SPEAKER CHARNOCK: Will the House of Delegates of the Eighty-second Annual Session of the California Medical Association please be in order.

The first order of business is the report of the Committee on Credentials and Organization of the House of Delegates, Dr. Hoffman.

DR. HOFFMAN: Mr. Speaker, a quorum is seated.

As chairman of your committee, I move that the visual roll call as seen at the entrance of this room be accepted as the roll call for this Sunday's session.

SPEAKER CHARNOCK: Is there a second to that?

DR. DONALD CASS: I second the motion.

. . . The motion was put to a vote and it was carried . . .

SPEAKER CHARNOCK: We are in session.

I first want to announce the committees.

Credentials Committee: Eugene Hoffman, Los Angeles, chairman; Louis P. Armanino, San Joaquin; Joseph W. Telford, San Diego.

Reference Committee No. 1—Reports of Officers, the Council and Standing and Special Committees: J. W. Moore, Ventura, chairman; James B. Graeser, Alameda; Ralph Teall, Sacramento.

Reference Committee No. 2—Reports of the Secretary, Treasurer, and Executive Secretary, Consideration of the 1953-54 budget, and 1954 annual dues: Robertson Ward, San Francisco, chairman; John E. Vaughan, Kern; Thomas P. Hill, Mendocino.

Reference Committee No. 3 — Resolutions and New Business, exclusive of Amendments to the Constitution and By-Laws: E. C. Rosenow, Jr., Los Angeles, chairman; Helen B. Weyrauch, San Francisco; Carl M. Hadley, San Bernardino.

Reference Committee No. 4—Amendments to the Constitution and By-Laws: Albert G. Miller, San Mateo, chairman; Thomas A. LeValley, Los Angeles; Dorothy Allen, Alameda.

C.P.S. Reference Committee, Resolutions, et cetera, relative to California Physicians' Service: Thomas N. Foster, Santa Clara County, Santa Clara, chairman; A. Norman Donaldson, Orange; Paul D. Foster, Los Angeles.

If there is no objection from the House, these reference committees will stand as read.

Hearing no objection, they are as read.

The next order of business is an address by our President, Lewis A. Alesen. (Standing applause.)

DR. ALESEN: Mr. Speaker, Members of the House of Delegates: The most important, the most efficient speech ever made was, "I thank you."

We shall now proceed to the awarding of the 50-Year Pins.

JOHN W. GREEN, M.D. President
ARLO A. MORRISON, M.D. President-Elect
DONALD A. CHARNOCK, M.D. Speaker
WILBUR BAILEY, M.D. Vice-Speaker
SIDNEY J. SHIPMAN, M.D. Council Chairman
ALBERT C. DANIELS, M.D. Secretary-Treasurer
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PRESENTATION OF 50-YEAR AWARDS

DR. ALESEN: We have a number of distinguished physicians whose names we shall call. If they are in the house will they please come forward for these awards: Dr. Clark L. Abbott, Alameda County; Dr. Margaret W. Kaiser; Dr. Robert T. Legge; Dr. Arthur M. McIntosh; Dr. George G. Reinle; Dr. George W. Sweetzer; Dr. Clemence A. Wills, Los Angeles County.

These physicians, as their names are called, please come up to the platform: From Los Angeles County, Dr. Edmund M. Lazar; Dr. Edwin O. Palmer, from Sacramento County; Dr. E. M. Wilder, from San Francisco County; Dr. Herbert W. Allen; Dr. George W. Ebright; Dr. Arthur L. Fisher; Dr. Charles E. French, from San Francisco County; Dr. A. S. Caner; Dr. George J. McChesney; Dr. William G. Moore; Dr. Silvio J. Onesty; Dr. Herman F. Wilson; Dr. Emma K. Bullits; Dr. Frank H. Zumwalt, from Santa Barbara County; Dr. Benjamin Bakewell.

Ladies and gentlemen of the House of Delegates, it is a pleasure indeed to have this opportunity to present these pins which you are giving these distinguished gentlemen and ladies of medicine for fifty years' service. (Applause.)

I wonder, ladies and gentlemen of the House of Delegates, if you wouldn't like to hear just a brief word from each of these gentlemen whom we have honored.

Dr. Reinle, who is a Past President of the California Medical Association.

DR. REINLE: Well, as I stepped on that platform, I said, "It is a hell of a long time." But, nevertheless, I can say this, probably for those that are with us, that it has been a very wonderful time to practice medicine for fifty years, and still be alive. Thank you. (Applause.)

PRESIDENT ALESEN: Anybody who has been at the University of California will, of course, know Dr. Legge.

Will you give us a word, Dr. Legge?

DR. LEGGE: Members of the House of Delegates, Mr. President: It is a great pleasure to be here today to receive this token. It seems to me that the fifty years I have been a member have passed very rapidly. So I have attained my majority.

I want to thank you all for this token. (Applause.)

PRESIDENT ALESEN: Dr. Edward O. Palmer, known as the Dean of Hollywood. Dr. Palmer.

DR. PALMER: Mr. Chairman, gentlemen: I feel greatly honored to be recognized among you. It is true I have been a member of this organization for fifty years. I was a member of the American Medical Association in New York City for eight years before that. So, I have been honored for years with the support of my associates in my practice of medicine.

I thank you very much for this. (Applause.)

PRESIDENT ALESEN: Of course, Dr. Caner is one of the maestros of San Francisco. Dr. A. S. Caner.

DR. CANER: Ladies and gentlemen: I thank the Society for the honor they have given me today, for having served fifty years—over, fifty-four in my case, as an active member of the California Medical Association. I thank the good Lord for giving me health and strength to live that long. Thank you. (Applause.)

SPEAKER CHARNOCK: I am sure we have all been very much inspired by the appearance of these gentlemen today.

As you are all aware, resolutions should be presented in triplicate. Stenographic services are available in Room 1344.

At this time, we will have the reports of the officers and of the special committees.

We have made a little different arrangement this year, and only those officers and special committees who actually have an additional report to make will be called upon. If any of these officers and special committees feel that they have an additional report at the completion of this collection of reports, we will be happy to let them make their report.

The first will be Dr. Sidney Shipman, Chairman of the Council.

REPORT OF THE COUNCIL

DR. SHIPMAN: Mr. Speaker and members of the House: As you know, the Council met all day yesterday and considered a number of things. I will not detail the procedure at the Council yesterday, except to say that there will be several resolutions which will be introduced on behalf of the Council when the proper time comes.

There is one matter, however, which I would like to have you acquainted with, which was dealt with by Dr. Alesen as chairman of the committee to deal with the matter of Blue Shield and Blue Cross in the southern part of the state.

With your permission, Mr. Speaker, I would like to ask Dr. Alesen to give a report of that matter to the House. Is that permissible?

SPEAKER CHARNOCK: Yes, sir.

Dr. Alesen, will you give the report?

REPORT OF THE SPECIAL COMMITTEE ON BLUE SHIELD-BLUE CROSS

DR. ALESEN: Mr. Speaker, and ladies and gentlemen of the House: By action of the Council of the California Medical Association, on February 22 a special committee was appointed by the chairman to seek close cooperation between the three professionally sponsored prepayment plans in the State of California. This consisted of Dr. Ben Frees, Mr. R. E. Heerman, Mr. George Bodenhausen, and myself as chairman.

We immediately called a meeting of the board of directors of the Hospital Service of Southern California and California Physicians' Service on March

5. At that time, almost without exception, the two boards of directors were present.

We had an excellent exploratory meeting at that time, and it was decided to set up a joint committee and to invite the members of the Blue Cross of Northern California, the Hospital Service of California, to participate in our deliberations, and so a more or less permanent committee was formed with three members from each of the three prepayment plans, with L. A. Alesen as chairman, and with the attorneys of the three plans acting as legal counsel.

Now, these committees have had two special meetings. We met once in Los Angeles on April 3, and once in San Francisco on May 8.

At first, bringing together the representatives of these plans, there was noticed a certain degree of skepticism. Inquiries were made as to just what the California Medical Association expected to accomplish, what were its purposes, and did this special committee in fact have the approval and the authority of the California Medical Association to proceed.

However, we very soon convinced these gentlemen that we did mean business very seriously, and that our one objective was to seek and to obtain the very closest possible cooperation between the sponsors of the three professional prepayment plans in California, for just one purpose; and that is in order that we might more effectively render to the people of this state good, prepayment medical care on a basis which would be sound, which would be competitive and which, most of all, would help us to meet the ever-present blandishments of the socializer.

Now, those are the plain facts of life as they were discussed.

At the last meeting held in the St. Francis Hotel in San Francisco on May 8, we worked until about 1:45 a.m. We discussed the various possible ways of cooperation from joint operating agreements on through to a final condition of a statewide joint corporation held by representatives selected by the medical profession, representatives selected by the hospital profession, and representatives selected by the public at large.

A special resolution was then prepared by Mr. George U. Wood of Hospital Service of California. Mr. Hoffman and Mr. Heerman stated in substance that it is the consensus of our special committee that ultimately and as soon as possible, a single, joint corporation should be formed to take over the functions of the three special existing plans. In the meantime, it was indicated that every step should be made to insure a closer cooperation in the sales force, the provisions of contracts, and in every manner to present to the public of California the fact that we and the hospital professions are in fact interested in efficient operation, and no longer want to squabble among ourselves.

Now, our committee presented a resolution to the Council this morning which was approved and which Dr. Shipman is going to present to you.

As the chairman of this special committee, I would like to say just one personal word. It is my opinion that today a great deal of progress toward our common goal has been made. I believe the petty differences, the personality clashes, the small, private vested interests that have been roadblocks to such an achievement in the past are gradually dissolving when these men of good will have gotten together around the council table and have found their opposition in the other organizations do not, in fact, wear horns.

I believe we can accomplish something worth while.

So, ladies and gentlemen of the House of Delegates, I think in the future, and I hope in the very near future, our legal department will be able to report to you that we have achieved something very solid, very fundamental.

SPEAKER CHARNOCK: Thank you, Dr. Alesen.

That report will be referred to Committee No. 1.

Next will be a report on C.P.S. Dr. Cass!

REPORT OF CALIFORNIA PHYSICIANS' SERVICE

DR. CASS: Mr. Chairman, Delegates, members of the C.M.A. House of Delegates: It is with pleasure and pride that I today report to you on the operations of the California Physicians' Service, and suggest the areas in which this plan can be of greatest service to the people of California and to the medical profession.

The six years I have served on the Board of Trustees have been years of continuous change in the field of financing the cost of accidents and sickness. During this period C.P.S. has continuously and rapidly grown. Most of the problems of the recent past were an outgrowth of this rapid expansion.

The Trustees of C.P.S. now look forward with confidence to a period of increased and broadened service to the public, beneficiary members and to its member physicians, and it is believed that members of the medical profession may share this confidence.

Careful estimates indicate that the membership of C.P.S. will increase during the next 12 months by more than 50,000; the number of physician members has increased during the past year and it is expected that it will continue to increase for the next year; services and benefits are being increased in certain areas of coverage; fees may be adjusted upward; and C.P.S. will continue to be the largest of the non-profit prepaid care plans in this state.

It is expected that C.P.S. will be an increasingly potent force in this field of prepaid care and will render the type and character of service of which any doctor might well be proud.

Physician Relations:

The number of doctor members continues to increase . . . and the cooperative attitude of doctors is gratifyingly improved. Doctors in various sections of the state are recommending C.P.S. membership to patients. Other doctors are volunteering to speak at meetings in behalf of C.P.S.; and the

attitude of the medical profession as expressed in letters, phone calls and personal contacts indicates an improved friendly attitude of helpful cooperation.

During the past year the experimental decentralized plan of beneficiary member and doctor contact in Santa Clara County has been expanded. Plans are now under way to broaden this method of service to each county of the state.

In other sections of California the plan whereby a C.P.S. representative notifies, by letter, telephone or personal contact, those patients whose claims are rejected for cause, has been extended, and doctors express approval in being relieved of the necessity of notifying patients of claims rejected by C.P.S.

The plan of notifying patients that their medical, surgical and hospital bills have been paid to doctors and others has likewise been extended to various sections of the state and this program has received favorable comment from doctors and patients alike.

At this time I wish to thank the Delegates of this House, the members of the C.M.A. Council, the members of Reference Committee No. 1, the members of the C.M.A.-C.P.S. Study Committee, the members of the Medical Services Commission, as well as the officers and members of the county societies for their patience and understanding during this period of adjustment. The expression of continued confidence has been heartening to the Trustees and has made possible the establishing of a foundation on which the future growth in service may be built.

Plan of Indemnity Coverage with Controlled Costs:

Members of this House will recall the recommendations of the C.M.A. Study Committee and the action of the delegates in connection with the proposed program of indemnity coverage with costs controlled under state, county and individual fee schedules.

The testing of this plan was left to the county societies and C.P.S. Many of the county societies have polled their members; others have developed programs leading to a consideration of the plan; but so far as is known, no county has as yet agreed on a county fee schedule.

The Trustees of C.P.S. authorized the formation of an indemnity insurance company, and articles of incorporation have been filed. Upon receipt of a request from one or more county societies, C.P.S. is prepared to develop contracts to fit county conditions, and to take such other steps necessary to give this proposed program a thorough test.

Blue Shield-Blue Cross Relations:

California: You will perhaps recall that the C.M.A.-C.P.S. Study Committee suggested to the C.M.A. Council that steps be taken to bring about a new working arrangement between the two Blue Cross plans and C.P.S. in California.

Dr. Lewis Alesen was appointed chairman of a committee to explore possibilities and make recommendations. Dr. Alesen called a meeting of the Trustees of Southern Blue Cross and C.P.S. This group approved in principle the desirability of a close working arrangement between the two plans.

A special committee of three trustees from each Blue Cross plan, together with three members of C.P.S. Board of Trustees, the attorneys and the executive directors of each plan, headed by Dr. Alesen as chairman, was formed. This committee held a number of meetings for the purpose of discussing ways and means to accomplish the desired results.

In the meantime, the dissolution of joint service contracts in Southern California has proceeded under a resolution adopted by the board of directors of the Southern Blue Cross, and the loss in members in C.P.S. in Southern California is largely a result of this dissolution. It is expected that the remaining joint contracts in Southern California will be dissolved before March 31, 1954.

National: It may be of interest to the delegates to know that the National Blue Shield Commission and the National Blue Cross Commission have recently signed an agreement whereby national accounts will be sold jointly and that these accounts will be serviced by Blue Shield and by Blue Cross in the different states.

By national accounts, of course, I mean those accounts such as interstate operators, General Motors, big companies like that. Through the national organizations, it will be sold and then distributed to the Blue Cross through Blue Shield plans in each state. That took a long time and a lot of work to get the two organizations to agree on details, but it has finally all been arranged.

With the increasing demand on the part of employers with plants and branches in different sections of the country—and of unions, especially industry-wide unions such as C.I.O.—demanding uniform coverage and nationwide benefits (with rates adjusted to the needs of each area) the demand for nationwide contracts is becoming more and more insistent.

If the doctor-sponsored and hospital-sponsored non-profit plans are to secure their rightful proportion of this coverage, then these two plans, working together, must develop a working arrangement at state level that will permit the rendering of uniform type of service nation-wide.

It is believed that Dr. Alesen's committee will lay the foundation for furnishing cooperative service to these national accounts.

Financial Status of C.P.S.:

C.P.S. continues in a sound financial condition. Payments made to doctors and hospitals, together with reserves necessary to protect these payments, represent 85½ cents out of each dollar received from members' dues.

Administrative expense, including cost of acquisition of new members, was 14.5 per cent of total dues income.

The stabilization reserves of C.P.S. on March 31, 1953, equaled $9.56 per beneficiary member. The minimum reserves of private insurance companies are set by law, but no one has as yet determined the

minimum reserve necessary in voluntary health plans. The rapid growth of all Blue Shield and Blue Cross plans has taken place in an era of expanding economy and inflation. No plan has yet been operated in a depression, with increasing unemployment and other deflationary conditions.

The businessmen members of the board now feel that C.P.S. reserves have reached a total that will permit some increase in fees and some reduction in the rates of certain contracts. The trustees recently appointed a C.P.S. Fee Schedule Committee to study, with the Finance Committee and the Medical Services Commission, the possibilities of such a program.

At this time I wish to personally thank the business men on our board who have contributed so generously of their time, energy and ability toward making California Physicians' Service a sound and substantial operation. Their services are deeply appreciated by the other trustees and I trust by the medical profession of California.

The financial condition of C.P.S. as of the end of the fiscal year, March 31, is reflected in the financial statement available to those interested.

Responsibility and authority for the management of California Physicians' Service rests with the Board of Trustees. This board consists of fourteen representatives of the medical profession. Eleven of these members serve for a period of three years, and may be reelected for one term of three years, with six years as the maximum period any member of this group may serve consecutively.

Three doctor members are appointed each year by the C.M.A. Council to serve for one year. These members may be reappointed each year as the Council may decide.

In addition to the doctor members, there are four lay members who also are elected for a term of three years, but lay members may be reelected for more than one term.

You will perhaps recall that upon recommendation of the Study Committee, the C.M.A. Council has now become the Nominating Committee for C.P.S. Trustees, and you will have the privilege of voting on the nominees for the coming three years at this Annual Meeting. Nominations may also be made from the floor of the House of Delegates at the time designated.

The members of the Board of Trustees of C.P.S. elect their own officers.

A number of operating committees are appointed each year and advise the trustees on matters relating to contracts, finance, medical policy, et cetera.

Recently a number of changes have taken place in the administrative management of C.P.S. and a step-by-step reorganization is now taking place under a plan developed several months ago. The trustees are determined to make C.P.S. the best managed voluntary health plan possible, and everything is being done toward that end.

Growth Possibilities of C.P.S.:

In California today C.P.S. has enrolled as beneficiary members approximately six and one-half per cent of the total population. The two Blue Cross plans and C.P.S. cover perhaps seventeen and one-half per cent of all of the people of the state.

The two Blue Cross plans and C.P.S. cover approximately 1,750,000 people in a state with a population of 10,000,000. In Michigan, Blue Cross and Blue Shield cover 2,750,000 people in a state with a population of 7,000,000.

The statement was recently made by a speaker in the East to the effect that the medical profession was best protected from the threat of socialized medicine if voluntary coverage was widespread among many insurance companies, non-profit plans and others, rather than to permit the development of a single plan that might become a near monopoly.

It is now the opinion of most leaders in the medical profession in California that C.P.S.-Blue Shield should be a strong plan serving a sizable number of members, but working with other plans and groups wherever practical.

Most groups interested in C.P.S. coverage are small in number. The leaders of large groups, whether employer or labor leader, contend that the C.P.S. income ceiling is today unrealistic, and that very few of the members of the group have incomes under the ceiling; and thus the present C.P.S. service plan becomes in fact an indemnity program so far as a large proportion of members whose incomes are now over the income ceiling are concerned.

The raising of the schedule of fees paid to doctors and the raising of the income ceiling would permit C.P.S. to enroll larger groups, as contracts would then be more nearly competitive.

The Future of C.P.S.:

Voluntary prepaid medical, surgical and hospital insurance in some form, whether provided by non-profit plans or private insurance companies, is now a part of the American way of life. Voluntary non-profit plans now have enrolled more than 40,000,000 persons in the United States. A committee of the State Chamber of Commerce estimates that 50 per cent of the population of California is now covered by some form of prepaid health insurance.

Most people realize that prepaid health insurance is still in its formative "trial and error" stage. The contracts or policies of most insurors are still subject to change, still being tried, tested and adjusted.

Those who have made a study in this field estimate that within the next five years 90 per cent of those employed will be covered by some form of health insurance paid for by the employer. Many unions are already bargaining for the payment by the employer of the cost of prepaid care for dependents as well.

It is believed that a non-profit organization such as C.P.S., controlled and directed by doctors, can best maintain a balance in this field and make unnecessary the fixing of fees by a department of the state as has recently been proposed in the case of workmen's compensation.

The Trustees of C.P.S. are determined to follow a program of increased benefits to beneficiary members, adjusted fees for doctors, competitive rates on coverage, closer contact and improved service to doctors, all to the end that both the public and the doctors may be better served in the financing of the cost of accident and sickness.

Moreover, a strong progressive C.P.S. is the logical instrument to express the medical profession's conviction that the basic principles of voluntary, prepaid health care on a service basis provide (1) medical direction and control, and (2) free choice of doctor.

Throughout this area, as you all know, there is a rising challenge to these basic principles from a type of closed panel plan that provides neither this free choice of doctor nor medical control. Instead it provides (under lay management) captive doctors and captive patients; the plan even encourages the outright solicitation of patients away from their own personal physicians.

As free physicians, with a duty to the public and to medicine, we can best express our convictions by our wholehearted support of medically-sponsored C.P.S.

The Study Committee, in its report to the interim meeting of the House of Delegates in December 1952, restated the objective of C.P.S. The Trustees, in their action, have caused many changes to be made in the coverage, scope of operations and management of C.P.S., and it is believed that the doctors today can point with pride to the progress that has been made in this California Blue Shield plan, without overlooking or forgetting that the road ahead is still steep, rocky and long.

Thank you, gentlemen, for your attention to the last report of this President of California Physicians' Service. (Applause.)

SPEAKER CHARNOCK: Thank you, Dr. Cass.

We will next hear from Mr. K. L. Hamman, the Executive Vice-President of California Physicians' Service. Mr. Hamman!

MR. K. L. HAMMAN (Oakland): Mr. Speaker, members of the House of Delegates: I have been asked to supplement the remarks of Dr. Cass, especially as they relate to the financial condition of the California Physicians' Service.

During the past two and a half years, under a program adopted in Southern California, there has been a dissolution of contracts held in Southern California.

Unfortunately, as a result of that dissolution, there has been spread abroad by competing salesmen or others, the claim that C.P.S. was not financially strong.

I should like to report to you in detail, therefore, as to the financial condition of C.P.S., without quoting too many figures.

In the year just ended—the financial year of C.P.S. ends on March 31—the total income of C.P.S. from dues from beneficiary members was $21,911,219.14. The income of the Blue Cross plan in Southern California was $17,406,915.65. The income of the Blue Cross in Northern California was $14,053,372.10.

The total of all three non-profit plans, therefore, was approximately $52,000,000.

The question of administrative expenses is always paramount in the operation of any plan of this type. Your large holders of group membership such as the Standard Oil Company or the California State Employees, or others, want to know how much it costs to administer the plan, how much service the member receives on the average.

Dr. Cass has reported to you that in the C.P.S. operation this past year, eighty-five and a half cents out of every income dollar from dues went to doctors, hospitals, or to the reserves to protect those payments.

That means that the cost of administration, the acquiring of new members, and the other expenses of operation amounted to 14.5 per cent.

The year before it was 15.14 per cent, and the budget as now approved for this coming year, beginning April 1, will again be 14.5 per cent.

During the period of operation of the last few years, C.P.S. has acquired cash reserves to protect the payment to both doctors and hospitals. And as Dr. Cass also stated in his report, the size of a reserve for a non-profit plan of this type has never been determined. The reserves for an insurance company are set. The minimum reserves are set by law; in a plan of this type, however, there is no such requirement, except in the case of Blue Cross plans and that is relatively small.

However, those who have studied the operation of Blue Shield and Blue Cross plans nationwide have hit upon a horseback rule which is the best that anyone yet has, for no plan has yet been subjected to the trials and tribulations that would come with a depression, or even a minor recession. No plan has yet been confronted with the problem of widespread unemployment, and, therefore, loss of income, especially that income paid for on the part of the employee.

This horseback rule is that a plan should have a reserve of equal to at least three months' service cost, medical and hospital, and a maximum of six months.

It may interest you to know what the reserves of the two Blue Cross plans and C.P.S. are in relation to that particular yardstick. The Blue Cross in Southern California has a reserve of equalling 1.15 months. In other words, about one and one-sixth of a month. The Blue Cross in Northern California has a reserve of equalling the service costs of 2.95, or almost three months. C.P.S. has a reserve of 3.26, or three and a quarter months of total dues.

None of these plans anywhere near approaches what was supposed to be the maximum reserve to be carried, but the Northern Blue Cross and C.P.S. have at least a reserve in relation to the minimum.

Expressed in another way, Mr. Linder, representing an eastern firm of actuaries, made a report to the C.M.A.-C.P.S. Study Committee last year in which he stated that the Blue Shield or C.P.S. re-

serve in California should equal 50 per cent of an annual income from dues.

Expressed in terms of the annual income, the Blue Cross now has 9.62 per cent of its annual income from dues as a reserve.

Blue Cross North has a reserve of equal to 24.56 per cent of its annual income, and C.P.S. has a reserve of equal to 27.14 per cent of its annual income.

Therefore, it would appear that all of the so-called voluntary plans in the State of California are in sound financial condition. There is none of them that is in difficulties financially, and the medical profession, I think, can look with pride, particularly at C.P.S. and it strong finances.

As you pass from the room today, there are printed financial statements of C.P.S. which will be distributed to you if you are interested. On the last page you will find a list of the Government bonds in which C.P.S. funds are invested.

C.P.S. has divided its reserves into savings accounts in banks of standing, banks which pay at least 2 per cent interest, and which have agreed that, if needed, the funds may be withdrawn without notice.

Also, C.P.S. has invested the balance of its funds in short-term Government securities, no security going beyond February 1954.

The plan of the present administration to raise interest rates has made it seem inadvisable to invest any funds in long-term securities, and, therefore, any of these securities might be held to maturity and no loss from principal would thus be suffered.

The average income from our Government securities is 2.15 per cent and, therefore, the reserves that have been built up to protect the payments to you doctors and to the hospitals, it is believed, are not only adequate, but so invested that they could be used in case of any difficulty.

The early months of the year, such as February, March, and April, are the high utilization months each year. At that time C.P.S. generally pays out more than it takes in; not always, but generally.

The operation the past year has been successful from the standpoint that the utilization as a whole has been low. This has come about through the elimination of some contracts that have been costly from the standpoint of utilization. It has come about from perhaps a reduction in utilization due to some adverse publicity last year. It has also come about by greater care in the addition of new members.

It might be of interest to you to know that C.P.S. added over 100,000 new members in the past year.

There is a net decrease, of course, because of the change in Southern California, but at the same time the program of development is proceeding now on a rather sound and substantial basis, to the end that the objective is expressed in Dr. Cass' report that C.P.S. be a sound, substantial organization of which any doctor member could well be proud, could be accomplished. Thank you. (Applause.)

SPEAKER CHARNOCK: Thank you, Mr. Hamman. Now that the union of C.P.S. and the House of Delegates has become legally sanctified, we will refer this report to the C.P.S. Reference Committee.

The report of the Secretary and the Treasurer and of the Executive Secretary as reported in the April issue of CALIFORNIA MEDICINE will be referred to Reference Committee No. 2.

VICE-SPEAKER WILBUR BAILEY: That leaves us next with the reports of the Standing Committees, the first one of which is the Executive Committee.

Dr. Donald Lum!

DR. DONALD LUM: Nothing additional.

VICE-SPEAKER BAILEY: Then, under the Auditing Committee, Dr. Lum, perhaps you will comment.

REPORT OF THE AUDITING COMMITTEE

DR. LUM: Mr. Speaker, House of Delegates: The Auditing Committee has prepared the budget for California Medical Association and for CALIFORNIA MEDICINE for the coming year.

Yesterday this budget was studied carefully by the Council and this budget as adopted by the Council will be distributed to you. I would suggest that you study it.

If you have any questions, appear before the Reference Committee, and we will be there to answer and discuss any questions that you may have.

I am sure you will be interested to note that the Council has recommended that the dues for the coming year be reduced from $40 to $36 a year. (Applause.)

VICE-SPEAKER BAILEY: They certainly interpret that as good news, of course.

That will be referred to Reference Committee No. 2.

Now we skip over several here until we get down to Item M, Committee on Public Policy and Legislation. Dwight Murray! (Applause.)

REPORT OF THE COMMITTEE ON PUBLIC POLICY AND LEGISLATION

DR. MURRAY: Mr. Speaker, Dr. Alesen, Dr. Green, members of the House of Delegates: I am very glad to be here to give you a little report on some of the activities that have been going on the past few months. I first thought I would give you just a few words on what was going on in Washington, if I may.

As you know, there was a special meeting of the House of Delegates in Washington on March 14 of this year. At that time they approved the President's Reorganization Plan of 1953. That has gone a long way in promoting the right type of atmosphere in Washington.

We feel each time we are there, each time we talk to any members of the administration, that the cordiality between the administration and the American Medical Association, or the profession of medicine in the United States is improving. That, gentlemen, is very heartwarming, I assure you.

There are a few things that have come before the National Congress that I think you might be interested in particularly. I don't believe I will be able to tell you anything that you don't know already. I am sure you all read the *Journal* and keep up with everything that is reported in there.

The doctors' draft law perhaps occupies the spotlight of all legislation that has come to Washington this year. As you know, we had a doctors' draft law; then the Department of Defense introduced a doctors' draft law, then the House Committee after studying the two laws, and after hearing quite a number of people and quite a bit of information in the way of testimony, then introduced its own bill. This bill at the present time embodies practically everything that the medical profession asked for.

I think I told you at the meeting in December in San Francisco that there were about 15 to 18 points, particularly, the American Medical Association was holding out for. Most of them have been embodied by the House bill.

Now, at the present time, or this past week at least, the Senate Committee of Armed Services—the chairman, of course, is Senator Saltonstall of Massachusetts—has been hearing testimony on the doctors' draft bill. The same testimony, or practically the same testimony given before the House Committee was given before the Senate Committee. This testimony was received very well. There was no sharpshooting. There was no sarcasm, and we have every reason to believe that the Senate committee will include or endorse the recommendations that have been made by the medical profession. Nobody knows until it is through the hopper, the final product, but we are hopeful that it will be satisfactory insofar as a doctors' draft bill could be satisfactory.

The one thing that seems to be agreed upon by everybody is that there should be no priority form. In other words, if a man has served two years, that will be that, and his term of service for the Government will be finished, except in case of dire emergency. That met with great approval by everybody.

At the present time the $100 extra compensation is under some discussion. There are two ways of going about that, and we are approaching it from both of those angles.

Senator Hunt from Wyoming has introduced a bill to have that $100 a month continue. As I understand it, rather through the grapevine, the Department of Defense has introduced that also, and has cleared the Bureau of the Budget. That may not be exactly true, but anyway it is being considered very well, although a good many members of the House Committee objected to it.

Now, as to things that we hear about over the radio, what are we going to do, or why didn't we do this, or why didn't we do something else, with regard to the old problem of Social Security and all of the things that might come up in that department. Well, we were told very definitely by many of the leaders of Congress that the way to approach that—and they are just as cognizant of the things that are going wrong in that department as we are, probably more so—that they wished to leave that to a committee which is to be appointed, a 25-man committee. It was first thought it would be 13 men, but they change it to 25. Thirteen of these will be appointed by the President, six by the President of the Senate and six by the Speaker of the House. These men that the President is going to select are not all members of the Congress by any means. He expects to appoint Governors from some of the states. He expects to appoint some industrialists, and others, who are interested in the entire problem.

Also, Congressman Curtis, as you know, is carrying on quite a study in the House on this whole welfare setup. That is under very serious consideration at the present time, and it is before these committees that I think the American Medical Association can best express itself; that will be done when the proper time comes.

I believe other things of interest to you are these: On the 25th of this month we have a committee appearing before a committee of Congress that is to study the medical care of rabies. That is important to us. That is a question that has been studied by both houses, chiefly by the House of Representatives, and that is under consideration. Tomorrow, the 25th, our committee from the American Medical Association will appear and give testimony.

I could talk on quite at length about the things that are happening there, but these I think are of prime importance to us here.

Now, the thing that we are most interested in from a legislative point of view is what is going on in California and what has happened, what might happen, and so on. I could not give this report myself at all. I would like permission at this time, Mr. Speaker, to have Ben Read give the House a play-by-play report, so to speak, of what has gone on at Sacramento this year. I would like to have Mr. Read.

VICE-SPEAKER BAILEY: Thank you, Dr. Murray. If there is no objection, Mr. Read will be recognized. (Applause.)

MR. BEN READ: Mr. Speaker, officers, Members of the House of Delegates: Our report will be rather brief, because it is in the nature of a progress report.

The Legislature is still in session and many matters are still pending and undecided; as soon as the Legislature has adjourned, or as soon as possible thereafter, on June 10, we will give you a more detailed report.

This has been the fastest-moving and most hectic session of the Legislature that I have ever seen in my few years around the Capitol. A total of 5,501 bills have been introduced. In addition there are 98 constitutional amendments and 504 resolutions. That is the largest number of bills that the history of the state has ever seen.

We have gone through those carefully, we thought, although we found a couple the other day that about eight of us missed, and we found over 500 that require watching; 304 that require constant attention,

and I have seen some of you present who have been at these committee meetings who know what we mean by "constant attention." It is not 24 hours a day, it is usually 26 or 30.

These bills fell into about 36 different categories, all affecting public health or the practice of medicine.

In his opening address to the Legislature, Governor Warren stated he would not again propose compulsory health insurance, but if anyone else desired to do so, he would support the bill if he thought it proper. A bill was introduced. It is Assembly Bill 3138, by Assemblyman Collins of San Francisco, and is the old C.I.O. bill.

To date, no attempt has been made to secure any action upon it, give it a committee hearing or pay any particular attention to it.

Also two bills have been introduced by Senator O'Gara of San Francisco to set up catastrophic health insurance in which the state would underwrite catastrophic health insurance. Neither of those bills has been moved as the term is used in the Legislature. They have not been set for a committee hearing, and since the time is getting short, we don't know whether they will still be brought before the Legislature or not.

The C.M.A. sponsored fifteen bills, and seven of these have been signed and are law. Others are either on their way through the Legislature, or have been dropped because their provisions have been attained in other ways.

I have copies of the signed bills here in case anyone should be interested.

The Board of Medical Examiners sponsored four bills which were approved by the C.M.A.; rather, four bills sponsored by the Board have been signed into law. They sponsored others, but not all of them have been cleared through the Legislature.

Now, the C.M.A. and Board bills relate to technical changes in the Medical Practice Act which have been found necessary as time goes on and matters change. One of the most important is the so-called injunction bill which gives the Board of Medical Examiners or ten or more persons holding physicians' and surgeons' licenses, the right to apply for an injunction or restraining order against persons who have engaged in or are about to engage in violations of the Medical Practice Act. I don't think I need to elaborate further as to the importance of such a measure. That passed the Legislature early in the session, and has been signed by the Governor, and will become a law in ninety days after the Legislature adjourns, or in September.

Revisions of the Dangerous Drug Act as agreed upon by the interested ethical professions have passed the Legislature and have been signed by the Governor.

The codeine bill has been signed into law. It permits certain codeine combinations to be dispensed on oral prescription, but it must be borne in mind that the Federal regulations still prevail, and until some changes are made there, and we understand changes are on the way, those provisions still prevail. So we hope none of our friends will get into too much difficulty on that. However, that bill did draw a lot of attention throughout the state. We are happy to report through the combined efforts of the physicians, dentists, pharmacists, and all interested groups, it became law.

The disability insurance law has been amended to give $10.00 per day for twelve days while the ill person is in a hospital. This is an increase of $2.00 per day, and the bill is on its way through the Legislature.

Senate Bill 199, while you don't grasp that by number, I think you know the general subject. We have had it up for many years. The various state institutions say they have great difficulty in recruiting physicians, and for years they have been permitted to employ unlicensed physicians, provided those persons have made the proper application to the Board for examination, and are properly qualified, and they are permitted to work for a period of not to exceed two years. Then they must take the examination, or rather, successfully pass the examination, or cease working for the state institutions.

We have had a great deal of argument on that. We still feel the state institutions and State Personnel Board can find licensed physicians, but they say they can't. This year the whole thing was worked over, all of the old sections were repealed, and it was placed into one bill, and that bill expires in 1955. We may have another hassel at that time, but we hope this situation is finally wrapped up in one package.

Twenty-one bills affecting hospitals have been introduced, some of them very important to the hospitals and to you in your procedures in the hospitals. There have been eleven bills amending the Vocational Nursing Practice Act. Some of them have passed the Legislature and are on the Governor's desk, and none of them have met any particular opposition.

Senate Bill 1797 by Senator Thompson of Santa Clara County, to set up an examining committee in the Board of Medical Examiners to license practical nurses, has been given approval by the committee and is now in the Senate Committee on Finance.

A bill to license naturopaths under control of the Medical Examiners has passed the committee and is in the Senate Committee.

One of the bills that has brought the greatest amount of mail to the Legislature has been the rabies control bill. That bill was the result of study by the C.M.A., State Department of Public Health, veterinary groups, and others, and as originally drawn it was quite an elaborate bill. It drew so much objection that it was amended down into just a local control bill, providing that an endemic area may be declared after proper hearings, and then in those endemic areas no dog is permitted to run at large and all dogs must be inoculated.

The antivivisectionists have had a field day on that. Frankly we can't see how they could object to it at the present time. They certainly ought to

love their own dogs enough to want them inoculated against rabies, but they have carried on a terrific campaign of mistreatment, and all the usual stuff that you have met in the past.

We have been successful in getting that bill out of the Senate Committee on Agriculture, and I say "we" advisedly, because it is really the problem of the State Department of Public Health and the livestock groups, wool growers, et cetera, and we were only called in actively on it a couple of days before the first committee session. It has been referred to the Senate Committee on Finance.

Another subject that has drawn considerable mail has been the psychology bills. There are three bills in to regulate the practice of psychology, and all taking a more or less different form of attack upon the situation.

When the first bill was called up for committee hearing last Tuesday, there were about thirty different people in the room, and I am certain there were thirty different opinions. What is going to result out of these three bills, no one knows. I understand some of the leaders of one psychology group say they feel the Legislature should study the matter further.

Another most important bill is Senate Bill 1066, sponsored by the C.M.A., and approved by the insurance groups and labor. It has passed the Senate, and is in the Assembly Committee, and it is very brief.

I will read it to you. "The Industrial Accident Commission may, after public hearings and by an order signed by four members, adopt an official minimum medical fee schedule."

That will be heard in the Assembly Committee on Thursday evening, and while I said in my opening remarks we are not trying to prognosticate, we have a pretty good hope that bill is going to come out of committee, because the labor groups and insurance groups will be there with us.

Your legislative program to date is in good shape. No legislation considered inimical to the public health and high professional standards has passed the Legislature as of this date, and many approved measures have been enacted.

There are eighteen days remaining, and those will be the most crucial. Those are the days when the committee meetings are held hurriedly, and things are brought up out of the archives that we thought might be sleeping, and brought to life, and amendments offered; frankly, we have done the same thing ourselves once in a while, so we must not criticize the other fellow too much. But, we will have to be on the job very assiduously the next eighteen days.

It has been a pleasure, of course, as always, to work for you, and we hope when the Legislature finally adjourns we will be able to give you a pretty good report of the work that you have made possible by your assistance at home. Thank you. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Mr. Read.

Will you continue, Dr. Murray?

DR. DWIGHT MURRAY: Thank you.

I tell Ben Read he is like whisky; the older he gets, the better he gets. This year has certainly been a good time to prove it.

As he stated, it has certainly been a fast-moving session, and at times it takes four or five to be there at one time to listen in on the committees to find out what is going on, to find out whether some testimony should be given, or should not be given. and it is pretty hard to spread the skirts of one man that wide.

I hope you have noticed in the report that we have finally been able to get some positive legislation. I mean by "positive legislation," legislation of our own which we think will help the practice of medicine, which will help the people of our state.

That has not been possible in years past because we were fighting a defensive game all the time. Now we are gradually emerging from that defensive area to the offensive, and these bills that Mr. Read told you about that have been passed, that have been introduced either by the California Medical Association or Board of Medical Examiners, certainly are of great value to the profession and to the welfare of the people of our state.

I want at this time to thank the members of the Council, particularly the Chairman, and all of the other members of the Council who have helped us so well and so much at the Legislature.

I want to thank our President and our President-Elect. The have both been before the committees and the Legislature. And I want to thank the staff, Mr. Hunton, our friends who have assisted us. such as Ed Clancy and Ben Read; and then finally I want to say to you that our legislative program could not carry on if we didn't have the advice and assistance of our legal counsel. That, I think, is probably one of the most crucial, one of the most important things with reference to our legislative program. I am sure that when I get out of the room here that there will be a certain young man over here take me by the nape of the neck, but that is all right. I am on the floor now, and I want to tell you that the services that have been rendered by Mr. Hassard have been invaluable to the whole profession of California.

I want to thank the people on whom I have called. We have to call on members from all over the state, and one of the nice things that has come to me as chairman of the Legislative Committee for these several years is that I have never been refused by a man to come to Sacramento, if it was humanly possible for him to come. The thing that is discouraging to them, and it is discouraging to us—it is embarrassing beyond words—is to have men come. maybe all the way from Los Angeles or San Diego. to Sacramento, or from Eureka or Yreka, or any other point in the state, and then the bill for which we asked them to come to testify for some reason or another is not called up for hearing, and they have to come back.

Now, that has happened every year, and it has happened this year, and I suppose it will happen every other year. But, gentlemen, we can't control those things. We do our best, but there are some things that we just can't control.

We want you to know that when such disappointment comes, that we are more keenly disappointed perhaps than anybody else.

As usual, we have had the assistance of the medical profession in Sacramento. We have enjoyed their assistance for a number of years, but this year it seems to have been better than usual. It seems to have been organized so that if there is something needed—what I mean is the urgent illness of one of the members of the Legislature or his family, that a physician is there within minutes; not hours, but they are there as fast as is humanly possible for them to get there.

That is a great sense of satisfaction to us, and believe me, gentlemen, that is something that we have that nobody else has. Everybody else can say they can do this, or they can do that, or something else. but that is a service that we can give, and the members of the Legislature always appreciate it.

I would like at this time for the Surgeon General of the Legislature, Dr. Frank MacDonald, to stand and take a bow. Could we ask him to stand?

(Applause for Dr. MacDonald.)

And he is just that. His assistance is always readily and willingly given.

I have been very fortunate this year in having the services of a young man in Sacramento, and I don't know how I could have carried on this session of the Legislature without his assistance. He is capable and willing, and is on the job.

At this time I would like, if you will, Mr. Speaker, to call on Dr. Daniel Kilroy of Sacramento.

VICE-SPEAKER BAILEY: Dr. Kilroy, will you stand so we can see you, please? (Applause.)

DR. MURRAY: I would like him to come forward.

VICE-SPEAKER BAILEY: Will you come forward, please, Dr. Kilroy?

DR. MURRAY: Dr. Kilroy is due recognition, gentlemen, because certainly he has done a fine piece of work.

VICE-SPEAKER BAILEY: Dr. Kilroy, do you want to say a few words?

DR. DANIEL KILROY (Sacramento): Thank you, sir.

My report is going to be most brief, and rather general for the same reasons that Ben Read outlined. namely that our work is still unfinished, and possibly more important, the Legislature still in session.

I have been markedly impressed by this current session of the Legislature, at the meetings at which it has been my privilege to attend and to observe the activities of the Legislature in some considerable degree.

My over-all impression is that of a gigantic task placed on the shoulders of our elected representatives.

I am pleased not only as a doctor, but as a citizen with the very high caliber of men and women who represent the people of this state at Sacramento. They have approached their task this year in an unusually serious vein, and with one objective, that of economy standing out over all others. Remember that these same representatives are citizens who are giving long hours of their time away from their own private enterprises, for which service they actually receive a mere pittance, so that we may profit through having at Sacramento as our representatives some of the finest brains in the State of California. One can develop nothing but admiration, respect, and appreciation for their civic devotion.

I have been impressed by the large number of bills introduced in an attempt to gain through legislation in lieu of education all those rights and privileges in the field of medicine now possessed only by those with proper training. I have been even more impressed by the ability of the legislators who, though devoid of medical training, so consistently see through to the basic purport of these various measures. They consistently weigh the public good against these fringe bills, and invariably the bill is found wanting.

It has been most gratifying to me to see the complete cooperation on the part of the medical profession with your Legislative Committee. When a call goes out from Dr. Murray, asking members of our profession to drop everything and come posthaste to Sacramento to assist us on some measure, the cooperation has been absolutely 100 per cent. Without such cooperation, our work would be absolutely ineffectual.

I have been more impressed with the tremendous detail of hard work which is required to keep constantly in touch with the progress and changes in the various measures as they move through the Senate and through the Assembly. I have noted the transformation in our old friend Ed Clancy, from a happy, smiling Irishman, to an acute case of legislativitis, with typical peptic ulcer phases. Ed has worked long and hard in the interest of medicine, and certainly deserves our thanks.

Ben Read, with his ever calm and quiet manner, has been constantly at his post. Without Ben's advice and guidance, we would soon become a group of legislative incompetents. To Ben must go much of the credit for the success of the constructive medical policy established by our legislators.

Hap Hassard practically became a resident of Sacramento as a result of the considerable call upon his services over the past five months. I have been constantly impressed by Hap's ability to take a bill, consisting of a mumbo-jumbo of unintelligible words, and with unexcelled clarity tell us what the bill really says. His presentations before the various committees of the Legislature reveal the unusually acute legal mind from which they have originated. I am sure Hap well knows the deep appreciation of the Legislative Committee and of the members of the California Medical Association for his many services.

I have learned much in the medical legislative field during this last year, and a large measure of that information has been gained by observing the adroit and skillful manner in which the chairman of your Legislative Committee, Dwight Murray, has

handled the multitude of problems presented. The bottomless well of information which Murf possesses makes his work appear deceptively easy. I would hesitate to think where we might have headed in this and past years with less experienced and able hands at the helm. We owe Murf a debt of gratitude which we can never repay. Thank you. (Applause.)

DR. DWIGHT MURRAY: Thank you very much, Dan.

You will all agree with me he is a good-looking, smart Irishman, won't you? (Laughter.)

Just a few more words, and I shall finish my report.

This session of the Legislature, as you know, ends June 10. Our next session of the Legislature will necessarily be before a new group. We hope that practically all of the members will be back, but that will be up to the people of California to decide. Half of the Senate, of course, will be reelected in 1954.

Now, this is May, and 1954 is not very far away. Now, why have we such fine types of men in Sacramento as we all know, and as has been very well pointed out by Dan Kilroy? Because of you at home. You have taken an interest in these things, and you have looked over the candidates, and you have selected candidates that would be a credit and are a credit to your own community, and a credit to our state.

Now, gentlemen, that same task will be before you in 1954. Eighty Assemblymen and twenty Senators. We ask you to do the job as you can do, and as you have done in the past, to screen carefully the candidates, that they will be the right type of men, that they will stand for high professional standards and for the improvement and betterment of the public health generally.

If you will do that, I think you can say as the boys say, after they have returned from a trip over the enemy lines, "Mission accomplished." So, if you will do that, that will be fine. Thank you very much. (Applause.)

VICE-SPEAKER BAILEY: Thank you very much, Dr. Murray.

Anyone who has been near Sacramento has but to reflect for a moment on the complete medical chaos that would occur if men like this didn't help us, and help us continually.

Next is a report by Mr. Ed Clancy, Committee on Public Relations. Mr. Clancy!

I think you know Mr. Clancy well enough without further introduction.

REPORT OF COMMITTEE ON PUBLIC RELATIONS

MR. CLANCY: Mr. Speaker and Members: President Eisenhower in addressing the delegates of the American Medical Association in Washington on March 14, said:

"We do have faith that the Americans want to do the right thing, and the medical profession will provide the kind of services our country needs better with the cooperation and friendship of the Administration, rather than its direction or any attempt on its part to be the big 'poobah' in this particular field."

The furtherance of these services continues to be the main objective of your public relations department.

Statewide, county by county, the principles of grass roots public relations have been set in operation. These include emergency medical care, care regardless of ability to pay, and the creation of forums within the various county societies where misunderstandings between patient and physician may be aired.

In a report of this nature there is always the tempting opportunity to "dress some windows."

However, we would rather report what others have said of our mutual objectives, particularly the establishment of 'round the clock medical care.

Mr. John Long, general manager of the California Newspaper Publishers Association, has written:

My dear Ed:

Seeing one of your advertisements giving an emergency telephone number to call to get a doctor quickly in the West San Gabriel Valley just reminded me to write and tell you of the excellent reaction I have been receiving from publishers around the state to your program of grass roots public relations.

This statewide cooperation is best exemplified by our Sacramento experience. Here, you know, the profession is on display to all the members of the Legislature and those whose duties bring them to the state's capital.

The following letter from Mr. T. F. Knight, Jr., legislative director for the California Manufacturers Association, should be reassuring to all members of the profession as to the fine job your colleagues are doing in Sacramento. In his letter to the Sacramento society, Mr. Knight wrote:

On my arrival in Sacramento in January, Mr. Ed Clancy gave me a card to use in the event I was in need of medical attention. Such occasion arose at the ungodly hour of 2:30 a.m. a week ago today. The number on the card was called and a very prompt reply was made by Dr. Louis E. Phipps. His very able assistance to me was deeply appreciated from both a psychological and medical standpoint.

Such a program as you have in Sacramento is a job well done and an excellent public relations program.

During the past year, the profession has announced its various public services in 750 newspapers. That this service is appreciated is indicated by the many favorable editorials from one end of the state to the other. An example is from the Pasadena *Star-News* whose editor wrote:

With a commendable sense of service to the public, the physicians of Pasadena and other principal cities in the state maintain a 24-hour telephone service through

which doctors may be called for emergencies. . . . The doctors are to be congratulated upon a fine demonstration of public duty.

Commenting on another service of the profession, and this surely is from the grass roots, the editor of the St. Helena *Star* wrote:

Physicians of Napa County, along with other units of the California Medical Association, have set up a Public Service Committee, for the better resolving of any misunderstanding which might arise between patient and doctor. Purpose is to bridge the gap which sometimes exists between a large medical organization and its patients. This is a worthwhile move, particularly, we would say, in large centers, where it is not possible for a doctor to know the background of his patients so well as in a small town.

It seems a wise move to restore the family doctor type of relationship, a move well in line with good public relations.

Radio station owners likewise have been most cooperative.

During the past year 121 radio stations have carried 1,612 fifteen-minute public service programs without cost to the profession. The total time amounts to 403 hours. And, though we've not attempted to translate this time into dollar-value, a quick appraisal indicates it to be more than the entire budget for your public relations department.

Quite naturally, plans are also going forward for television programs in both Los Angeles and San Francisco. Through the fine cooperation of KTLA-TV here in Los Angeles, an extended series of live medical programs is being prepared for early release as a public service feature. This will bring authoritative medical information to the public through the medium of direct participation by doctors themselves.

Of less dramatic interest but of importance in the over-all picture, C.M.A. members have ordered 805,-160 "Reminder" cards and 200,080 Health Records. Comments received from the public compliment the profession on these services.

In our opinion, the profession is at its very best when it heralds new advances in the science of medicine and brings new hope to the suffering. The profession is playing an equally important role when it denounces spurious remedies and names the names of the so-called remedies and the charlatan promoters.

The recent cancer expose is a case in point and caused the Los Angeles *Times* to declare:

The action of the California Medical Association in establishing a panel to expose and discredit spurious cancer "cures" and take firm action against doctors using them is warmly applauded. Here is an example of a profession rightly jealous of its reputation taking strong and positive action to preserve it and at the same time protect the public.

Likewise, the profession has met its obligation to the public when your leaders announced that gamma globulin was not a certain prophylactic for poliomyelitis and that it would be in short supply. Here again, you have received much editorial support throughout California.

Forthright actions, such as those outlined, will keep American medicine from the control of the political "poobahs."

However, we in the public relations department are deeply concerned about the "poobahs" *in* medicine.

These people in high places account for headlines such as "Medical Abuses Scored by U. S. Surgeons' Leader."

After "scoring the abuses," the statements always conclude that the infractions are by but a few members of the profession.

The recent flurry started in a national news magazine had repercussions in the nation's press for over two months, thus undoing much of the positive work of public relations departments in all states.

It is our opinion that too long has the vast majority of the profession suffered from the misdeeds of those oft-mentioned "few." (Applause.)

We are convinced that those who make headlines could best use the authority vested in them to *eliminate* the oft-mentioned "few." It cannot be done with printers' ink!

If they cannot accomplish *positive* results for the profession, again in our considered opinion, these "poobahs" should be relegated to Gilbert & Sullivan roles of "royal water meter readers" and they should take the "few" with them! (Laughter and applause.)

We would like to conclude this supplementary report with a sincere commendation of the many county societies, including the very small ones, which have developed sound local programs in the public interest. Their accomplishments, as will be indicated by a review of the preconvention bulletin, add greatly to California medicine's public relations. To all societies, we repeat that your public relations department is *at your service!*

To the officers and Council of C.M.A., the Public Relations Committee and the Advisory Planning Committee and to the executive secretary and legal counsel, we extend our deep appreciation for their understanding, cooperation and counsel in our *positive* program to keep medical economics in step with medical science.

Respectfully submitted. Thank you.

VICE-SPEAKER BAILEY: Thank you, Mr. Clancy.

That report, as well as Dr. Murray's report, will be sent to Reference Committee No. 1.

Any further comments by the Cancer Committee?

I merely point out the information supplemented by what Mr. Clancy said: At the present time due to

the work of Dr. Macdonald and Dr. Garland and other members of the Cancer Commission, there is now a list of drugs. It is handy; if you get a telegram from New York saying, "How about that?" you merely refer to the list. I am sure you all have requests for such information.

Are there any other reports of Standing Committees? If not, we will progress to the special committee reports.

Delegates to the American Medical Association. Dr. Gordon MacLean will give that. Dr. MacLean!

Reports of Special Committees

DELEGATES TO THE AMERICAN MEDICAL ASSOCIATION

DR. MACLEAN: Mr. Speaker, members of the House of Delegates: I have been requested to give a very short, thumbnail, two-minute report on the activities of the delegates to the American Medical Association.

I would like to emphasize that our business back there is to take your business back there; so, if you have anything that you wish us to carry out, please bring it in to the House of Delegates here so you may pass on it.

It is difficult at the last moment to be presented with resolutions to take back where we are going to meet with the American Medical Association if we don't have instructions from this House.

Your delegation consists of twelve members. That is second, New York being the largest with seventeen. However, we are aided and abetted by three other delegates from sections who happen to be from California. I assure you these men are very, very helpful indeed.

Your delegation is very active. It has taken part in the three meetings that we have had during the last year; the special meeting in Washington, perhaps, was one of the most interesting. Dr. Murray has told you about what took place there, but I believe we all came back with the impression after listening to President Eisenhower and Mr. Taft and Mr. Judd, that we are represented now by men who are going to be fair to the medical profession.

I know I was greatly impressed by the President's geniality, his sincerity, and when he was sitting down at rest, with his grim determination.

I have talked to many members from the deep South, and they, I believe, all have about the same idea concerning the President. They were very, very kindly toward him.

I might tell you just about what your delegation does. It arrives usually a day before, and has breakfast at half past seven or eight o'clock, immediately gets down to business and maps out what the program is going to be for each day.

We take up the various resolutions or business as it comes along. We follow things going to the committees, and I assure you that one of the delegates or the alternates—and may I say here the alternates have been most helpful—is assigned to committees to see what happens and to offer discussion, if necessary, but especially to report back to our delegation each morning at breakfast what is going on. That way we keep in very close contact with the business going on in the American Medical Association.

Now, we have a very representative group of men. We have very good speakers. We have men who are very good at committees. We have others who are very good, let us say, at working in smoke-filled rooms, and other out-of-the-way places. (Laughter.) I am sure that you will find this sort of work pays off in dividends.

At noontime we entertain each day at luncheon any delegate who wishes to come up to our room, and I assure you those are very well attended luncheons.

In the afternoon, or at what other time it may be, we attend meetings of the House of Delegates, Reference Committees, and in the evening you will usually find a group of California delegates out with groups of delegates from other parts of the country. So, your California delegation, I believe, is very well-known indeed.

We have been very fortunate in the past year with having official representation. As you know, Dr. John Cline is immediate Past President.

Dr. Dwight Murray was on the Board of Trustees, and chairman of the Board, and we were very fortunate indeed, I believe the American Medical Association was extremely fortunate when it elected Vincent Askey as Vice-Speaker.

I believe without doubt, within a year or two, when his time comes, he will be Speaker of the House of Delegates of the American Medical Association.

Now, just in case you think this purely a hard-working organization, I assure you that it is. But, at the same time we have quite a lot of time for fun, and when we come home looking rather tired, that wasn't all due to putting in long hours working at our jobs. We had to have a little fun along with it, but I assure you that you are represented by an organization of men which is a very functional one, and what is more important, very agreeable and very sociable. Thank you. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Dr. MacLean, for your report on smoke-filled rooms, and other "out-of-the-way places."

As a matter of fact, I watched these men at work, and he is very modest when he says they aren't working all the time.

Your report will be referred to Reference Committee No. 1.

Next is the report of the C.P.S. Study Committee. I will report it went out of effect in the last meeting.

You have already heard from Dr. Alesen about the amalgamation of Blue Cross and Blue Shield.

The next speaker, Dr. Leslie Magoon, will speak on the Medical Services Commision. Dr. Magoon!

REPORT OF MEDICAL SERVICES COMMISSION

DR. TEALL: Mr. Speaker, members of the House: In case there is any question, I am not Dr. Magoon. Dr. Magoon asked me to render this supplementary report on behalf of the Medical Services Commission, and if there is any question in anybody's mind, my name is Teall.

You will find the printed report in the preconvention Bulletin, but because your Medical Services Commission is the judge of your permanent organization, and yet has potentially perhaps the greatest job after C.P.S. of anything the C.M.A. has, we want you to be thoroughly aware of the way we are groping toward our assigned objectives. For that reason I just want to report on what has happened since the preconvention Bulletin was prepared.

Since the published report was prepared, the Medical Services Commission has held two meetings, each preceded by a meeting of its Executive Committee.

On March 21 and 22 a joint meeting with the California section of the Health Insurance Council of the United States was held at the Biltmore Hotel in Santa Barbara. At this meeting a number of problems of mutual interest to the commercial insurance carriers and to the members of the California Medical Association were discussed in great detail. The insurance representatives expressed themselves as being very pleased at the opportunity to discuss their problems with an organization representing our state society. The conferees from each group greatly increased their basic understanding for future guidance.

On April 18 and 19, the commission met in San Francisco and heard extensive discussion of health insurance problems in Australia by Dr. C. H. Dickson, the secretary of the Victoria Branch of the British Medical Association, a discussion from Mr. Ransom Cook on his personal observations of present European health insurance schemes, and discussion from Mr. K. L. Hamman on possible future mutual problems of the Medical Services Commission and California Physicians' Service.

At the April meeting a committee was organized to define the principles which should go into the establishment of fee schedules sponsored by the C.M.A., such as the C.P.S. schedule. It is felt that such principles are basic to any further activity of the Burnham Committee of Eight and to integration of activity of fee schedule committees with functions of the Medical Services Commission.

The Medical Services Commission is now preparing, with the Public Relations Department of the California Medical Association, a brochure for distribution through doctors' offices discussing various aspects of the problems of health insurance. Final action is expected on this pamphlet at the meeting of the Commission to be held concurrently with this State Convention. Semi-final action is also expected at this meeting on the "principles" of voluntary health insurance which have been under study by the Medical Services Commission since its organization.

VICE-SPEAKER BAILEY: Thank you very much, Dr. Teall.

Dr. Teall, normally that would go to Reference Committee No. 1, and there we shall put it. If it should happen that you would prefer to have the report sent to C.P.S. Reference Committee because you think it might be more appropriate, you can tell us so later.

We have the Committee on Industrial Health next. Christopher Leggo cannot be here. He sent a supplementary report as follows:

REPORT OF COMMITTEE ON INDUSTRIAL HEALTH

VICE-SPEAKER BAILEY (reading): "To the President and the House of Delegates:

"Your Committee on Industrial Health is gratified to report that the California State Nurses' Association has been most receptive to the 'Nursing Services in Industry: A Statement of Principle,' which was published in the April 1953 CALIFORNIA MEDICINE as a committee report.

"In keeping with our invitation, the California State Nurses' Association has edited the statement, and in so doing, has clarified, in the opinion of your committee, the meaning in some sections, and has, we believe, so strengthened the entire statement.

"The draft they have presented is being submitted to the Council, with a recommendation that it be approved for issuance as a joint statement of the California Medical Association and the California State Nurses' Association.

"Respectfully submitted."

VICE-SPEAKER BAILEY: Are there any further standing committee reports or special committee reports, or reports of officers? We are asking particularly, because we have short-cut this program a little in the interest of saving time. But we don't want to exclude anybody who should be heard.

We will have announcements at the end of the period.

. . . Announcements . . .

VICE-SPEAKER BAILEY: Now, Dr. Garland.

DR. L. HENRY GARLAND (San Francisco): Mr. Chairman, I understand Dr. Macdonald of the Cancer Commission does have a supplementary report on the Cancer Commission, and he is in the back of the room.

VICE-SPEAKER BAILEY: Dr. Macdonald, will you come forward, please?

SUPPLEMENTARY REPORT OF THE CANCER COMMISSION

DR. MACDONALD: Supplementary to the regular report of the Cancer Commission, the Commission wishes to offer the following resolution:

WHEREAS, The Cancer Commission of the California Medical Association has, after careful investigation, demonstrated the ineffectiveness of certain agents proposed for the treatment of cancer; and

WHEREAS, The said Cancer Commission has evidence of the use of these agents in private practice by certain members of the California Medical Association; now, therefore, be it

Resolved, That this House of Delegates request component county societies to take appropriate action toward the investigation and appropriate disciplining of those members who persist in using such unproved remedies for cancer without facilities for investigational purposes under controlled, scientific conditions.

VICE-SPEAKER BAILEY: Thank you very much, Dr. Macdonald.

Resolutions at this particular moment are a little out of order, but unless anyone objects, we will put that resolution over to Reference Committee No. 3.

We would like Dr. Macdonald to have it in triplicate by the time that you can. Those things can be arranged, if you ask our Secretary.

There seems to be a certain amount of curiosity about when we get through this afternoon. Perhaps we can tell you what we have in mind next. As of the Wednesday meeting, between two and four, Dr. Charnock and I have agreed, if it meets with the consent of the House, to have an Executive Session. It may not last until four, but, at least, it will start when we reconvene. That is important because some of you perhaps will wish to have your resolutions discussed at that time.

At the present time, unless there will be no objections, we would like to have the reports of Reference Committees Nos. 3 and 4, and then go to the report of Reference Committee No. 1, which will probably be done after lunch.

If there is no objection to having the report of Committee No. 3 at this time, we will proceed with that.

Report of Reference Committee No. 3. Dr. Halley is going to make the report.

Dr. E. C. Halley from Fresno.

REPORT OF REFERENCE COMMITTEE No. 3

DR. HALLEY: Mr. Speaker, and members of the House of Delegates:

Your Reference Committee No. 3 was appointed April 27, 1952, and with the 1953 Annual Session, will have served at three consecutive sessions. The membership of this committee has been composed of Dr. E. C. Rosenow, Jr., of Los Angeles County, Dr. Francis Rochex of San Francisco County and Dr. E. C. Halley of Fresno County. We submit the following report dealing with and making recommendations on all matters submitted to Reference Committee No. 3 at the 1952 Interim Session of December 6 and 7.

The committee received, from the House, seven resolutions for consideration. Three of these resolutions, to-wit, Nos. 1, 3 and 4, were voted as emergency resolutions and were acted upon and disposed of at the Interim Session. Resolution No. 9 was introduced at the 1952 Annual Session and brought before the House at the 1952 Interim Session but at the suggestion of its author and by the vote of the House was recommitted to Reference Committee No. 3. We have therefore for your consideration at this time the five following resolutions.

Now, you have all had copies of these resolutions sent to you, and I presume that it isn't necessary to read these resolutions if I merely refer to them by way of their content.

VICE-SPEAKER BAILEY: If it suits the House, it would suit the Speaker. Probably you had better give us a little summary on each one. Thank you.

DR. HALLEY: Well, I will give you a brief summary of each one as presented, and I think that should suffice to clarify what we have under discussion at the particular moment.

Resolution No. 9 refers to the desirability of amortizing the cost of technical and professional education, and recovery of said costs through income tax deductions.

Now, at the Annual Session in May 1951 a similar resolution was defeated by the House when the Reference Committee pointed out that precedents and decisions had been established in the Internal Revenue Department against such amortization. Your present Reference Committee explained in its report at the last Interim Session that the editorial referred to in this resolution concerns the Reed-Keogh Bill dealing with voluntary pension plans for self-employed professional individuals. We also stated that this resolution proposed tax considerations equally germane to many professions other than the medical profession and with the Reed-Keogh Bill still a live issue, there must be some limitation on what the medical profession should ask for all at one time. Feeling that nothing additionally helpful would be accomplished by the adoption of this resolution, we recommended a do not pass at that time.

It was brought to our attention that after the preparation of our last report "There has been some change in the prospects for political thinking in Washington and secondly that Congress took no action on the Reed-Keogh Bill. Therefore, the committee comments were not pertinent."

We of the committee feel that our comments were valid at the Interim Session and even more so at this time. The Reed-Keogh Bill is still a live congressional issue, not a dead one. To quote from *Medical Economics*, February 1953, "The proposal will almost certainly be voted, eventually. But tax-writing Congressmen say that 1953 won't be the year because the Republicans are grimly determined to balance the budget. Leaders have decided that further revenue losses must be avoided. Besides, it is axiomatic that one tax equalization measure means opening the door to hundreds of others."

It would seem that a portion of the cost of a professional education is retrieved by fees intended to be higher than a laborer's wage. If our fees are to be eventually dictated to us by others, the request might have more significance. With the average in-

come of physicians being at a higher point than at any time in our history, we feel Congress would at this time look with misgiving on a program which would set such a precedent of giving tax relief by permitting amortization of educational expenses.

For the reasons here recited your committee again recommends that this resolution do not pass.

Mr. Speaker, I move the adoption of this section of our report.

VICE-SPEAKER BAILEY: Do I hear a second?

DR. DONALD CASS (Los Angeles): Second.

VICE-SPEAKER BAILEY: You understand this is before you from the Interim Session. Therefore, it has to be adopted or otherwise now. We are, therefore, open for discussion. Any comments?

... The question was called for....

DR. BURT DAVIS (Santa Clara County): I think that the report of the committee misses the point somewhat. I think that the report of the committee also admits that there is a certain amount of inequity in the way in which all professional people, not only doctors, but lawyers and surveyors, and every other type of person, has to spend more money on his education than the common laborer. I wish merely at this time, for the sake of emphasis, and I hope the chairman of the committee won't consider me impertinent, to read an editorial from the *Fresno County Bulletin* which appeared in the May 1953 issue.

Over the editor's signature it states, "Do you believe that physicians should be permitted to make amortization deductions in their income tax to recover the cost of professional education? Logically it would seem that this expense should be deductible as well as later expenditures for postgraduate or refresher courses. A taxpayer can recover amortization deductions only for the amounts invested in property used for the production of income. Property does not mean simply tangible, physical property. It means intangible as well, such as leaseholds, patents, copyrights, et cetera. The question is, can the knowledge and skills that the physician acquires through the years of study also be considered as property? From the economic viewpoint, there is no reason why a physician or other professional person should be treated differently from a businessman. The businessman must invest in physical equipment before he starts producing goods or services and earning income. The physician makes a comparable investment in acquiring the knowledge and skills to be used in carrying on his work.

"As Mr. Justice Cardozo once said, 'Learning is akin to capital assets.' It is apparent then that professional men with an expensive education would stand to gain by a change in the present rule. Only an investment in property as now restrictively defined may be amortized in taxes, but there is good reason for redefining the word 'property.'"

The joint committee in the Internal Revenue Bureau is improving the tax laws. Why not accept this invitation and try to receive more favorable tax consideration?

We have all heard the squeaking wheel gets the grease. Let's make a few squeaks. (Laughter and applause.)

VICE-SPEAKER BAILEY: Thank you, Dr. Davis.

Is there further discussion?

There being no further discussion, the Chair will put the question.

You recognize that the committee recommended do not pass. Therefore, if you vote "aye," you are agreeing with the committee that we shall do nothing further with the situation.

All those in favor say "aye."

... The motion was put to a vote....

VICE-SPEAKER BAILEY: The Chair is in doubt. Those in favor please rise.

... A standing vote was taken, and it was carried....

VICE-SPEAKER BAILEY: Dr. Halley, will you proceed, please?

DR. HALLEY: Resolution No. 2 refers to making medical and dental expenses fully deductible for income tax purposes.

Your committee is of the opinion that any method of providing tax relief for the prevention, cure, correction or alleviation of a bodily condition would be most appropriate at this time. We have, however, changed the second paragraph by striking out the words enclosed in parenthesis, to-wit: (less than 5 per cent of gross income). This deletion in no wise changes the intent or meaning of the resolution, whereas the retention of the words makes for inaccuracy of fact and however interpreted is at variance with income tax law. In Long Form 1040—"The law allows you to deduct only those medical and dental expenses which exceed 5 per cent of your adjusted gross income."

The committee recommends that this amended resolution do pass.

Mr. Speaker, I move the adoption of this section of our report.

VICE-SPEAKER BAILEY: Is there a second?

... The motion was seconded....

VICE-SPEAKER BAILEY: Any discussion on this suggestion?

DR. CHARLES A. NOBLE, JR. (San Francisco): It seems to me this resolution has a great deal of merit at this time, and besides that, anything of this sort that is pushed by the medical profession may gain for us increasing good public relations. But if the resolution as introduced should be passed, it seems to me there is a certain inequity.

For example, in the lower income tax bracket, suppose someone had a bill of hospital and medical expenses on the order of $1,000 or $1,500, and that family's total income tax liability for a year were of the order of only $100 or $150. The tax relief so afforded would be quite small, and incommensurate with that tax relief that would have been afforded someone in a much higher income tax bracket.

It therefore seems to me that one might make provisions in such a bill so that that tax relief can

be carried forward for several years. There is precedent for this. In a certain number of income tax provisions, like those of capital losses, there is provision for carrying over those losses; also the same for capital gains, I believe.

Therefore, although I think this is not allowed, Mr. Speaker, I would like to amend that resolution merely by adding a phrase. That phrase would be, "and to include a provision—"

VICE-SPEAKER BAILEY: Where do you add this phrase now?

DR. NOBLE: I will read the whole thing.

VICE-SPEAKER BAILEY: Yes, go right ahead.

DR. NOBLE: In the very end of the resolution, "and to include a provision that the deduction may be carried over for several years."

In other words, the last resolve would read as follows: "That the California Medical Association through its American Medical Association delegates seek to encourage national legislation which will permit medical expenses actually paid by the taxpayer, such as doctor, hospital, laboratory, drugs, and dental expenses, and health and accident insurance premiums to be completely deductible by the patient for income tax purposes, and to include a provision that the deduction may be carried over for several years."

VICE-SPEAKER BAILEY: Thank you very much, Dr. Noble.

DR. ERNEST W. HENDERSON (Alameda): Is that good to say "several years"?

DR. NOBLE: That is the point. It was only a recommendation to the group in the east.

VICE-SPEAKER BAILEY: Therefore, since it is a recommendation, we don't have to be too specific.

Dr. Hodges.

DR. FRANCIS T. HODGES (San Francisco): May I suggest the use of "amortization," rather than "carried over a few years."

VICE-SPEAKER BAILEY: How do you feel about that?

DR. NOBLE: It is perfectly all right.

VICE-SPEAKER BAILEY: You make that motion?

DR. NOBLE: Yes.

VICE-SPEAKER BAILEY: And you second it?

DR. HODGES: Yes.

DR. STANLEY R. TRUMAN (Alameda): Mr. Speaker, our legal adviser doesn't suggest that.

VICE-SPEAKER BAILEY: Will you tell us about it, Mr. Hassard?

MR. HOWARD HASSARD: If the cost or expense for medical care exceeds the individual's income in a given year, the unused portion may be carried forward against income in succeeding years. "Amortization" is the wrong word, because that has to do with the depreciation or depletion of a capital asset. (Laughter.)

VICE-SPEAKER BAILEY: Dr. Hodges, are you unamortized by this time? (Laughter.)

Now, the amendment stands before the House as seconded by Dr. Hodges, and now it is in its original form, I take it everyone agrees.

Is there any further discussion? This is on the amendment. There is none.

Those in favor of the amendment say "aye."

. . . The motion on the amendment was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. Halley, then the question goes back to the original section, and that has been seconded already as amended.

Is there any further discussion?

All those in favor of the original as amended will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. Halley, will you continue, please.

DR. HALLEY: Resolution No. 5 pertains to the basic sciences in relation to the healing arts.

Your committee feels that this subject of basic sciences in relation to the healing arts should be investigated. We are of the opinion, however, that until the problem has been fully studied, to formulate legislation would be premature. Therefore, we recommend a substitute resolution as follows:

Resolved, That the President of the California Medical Association appoint a committee whose function shall be to investigate thoroughly the problems involved in such requirements and report to the Council.

Your committee recommends that this substitute resolution do pass.

Therefore, Mr. Speaker, I move the adoption of this section of the report.

VICE-SPEAKER BAILEY: Is there a second?

. . . Calls of "second" . . .

VICE-SPEAKER BAILEY: Are you ready for discussion?

. . . The question was called for. . . .

VICE-SPEAKER BAILEY: Any discussion?

Dr. Foster, you are the author of this resolution. Will you please speak to the question?

DR. THOMAS FOSTER (Santa Clara County): Thank you, Mr. Speaker.

It was considered that the functions were sequential, and the investigation would precede formulation, and formulation would, in turn, precede seeking legislative relief. If it is necessary to spell it out, I believe that can and should be done. Otherwise, I can see no need to emasculate this resolution and confine it simply to investigation. It is something that is long overdue and much needed, and I think we should put no roadblocks in its way.

I could see only one other objection, that this commission might proceed without approval of the Council, and I think perhaps that should be in the resolution as well.

So, if I may then, Mr. Speaker, I will propose to amend this by the substitution of the original mo-

tion with modifications which would then read as follows:

"*Resolved,* That the President of the California Medical Association appoint a Commission whose sequential functions shall be, (1) to thoroughly investigate problems involved in such requirements, (2) to formulate suitable legislation with the aid of legal counsel and other informed sources, (3) with approval of the Council, to seek legislative relief, utilizing such public relations counsel as appears necessary and desirable successfully to achieve this goal."

VICE-SPEAKER BAILEY: Doctor, just a minute before you go back, so we have this thoroughly in mind. Do you mean to amend the suggestion of the committee this way?

DR. FOSTER: I propose to amend the committee's amendment by the substitution of the revised original amendment in which I make two changes; one change being that the function shall be sequential, and the second change that Council approval shall be necessary before seeking legislative relief.

VICE-SPEAKER BAILEY: That is all right. We will put that in the form of an amendment, then.

Is there a second to the amendment?

. . . It was seconded. . . .

VICE-SPEAKER BAILEY: Any discussion on the amendment?

A MEMBER: I have a question. What does "counsel" mean? How is that spelled?

. . . There were calls of "c-i-l." . . .

VICE-SPEAKER BAILEY: Probably we have to have both, as a matter of fact. That is the amendment. If there is no further discussion, we will vote on it.

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: We will proceed to the committee's report as amended.

Is there any further discussion on that subject?

DR. HOWARD C. MILES (Monterey County): I want to support Dr. Foster in his recommendation on this resolution. I feel too long in the past the initiative in promoting legislative programs in the state has lain in the hands of the fringe groups.

As Dr. Murray pointed out, we have in the past been on the defensive, engaging in a holding action, with our legislative program in the state and in the nation.

We are now gaining confidence in our legislative program, and it is time now we get on the offensive.

I think that this resolution is a step in the right direction to make the basic science requirements mandatory in the state.

The Reference Committee's recommendation to refer this to a commission for study without any positive action coming out of the study, takes away from this resolution the thing that makes it important. And that is making ourselves prepared to offer a legislative program when the time is ready.

So, I would recommend that we approve the resolution as amended by Dr. Foster, and not as recommended by the Reference Committee.

VICE-SPEAKER BAILEY: Dr. Miles, we have approved the resolution as amended.

Probably the Chair can shorten debate on this by saying what Dr. Miles has just said is undoubtedly the opinion of the House, because this has come up in the Council and we have discussed it before.

Perhaps this is the way to do it; unless there is some objection to the particular method, we would have to continue and ask that you follow the committee's "do pass" or vote against it, if you don't want it as amended. Therefore, unless there is further discussion, the Chair will put the question.

All those in favor of the committee's report as amended will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. Halley, will you proceed?

DR. HALLEY: Resolution No. 6 refers to the inadequacy of medical services in various communities, and suggests surveys and studies concerning these inadequacies.

There are several committees of the California Medical Association and the American Medical Association already active in obtaining information relative to the inadequacy of medical services in various communities. We, therefore, recommend that this resolution be referred to the Council for appropriate action.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Is there any discussion?

All those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: This is referred to the Council for appropriate action.

Now, Dr. Halley.

DR. HALLEY: Resolution No. 7. This resolution pertains to methods of providing subsidies for physicians in areas lacking adequate medical personnel.

Until the information referred to in Resolution No. 6 is obtained and interpreted, we are of the opinion this resolution is premature.

Your committee, therefore, recommends a *do not pass.*

Mr. Speaker, I move the adoption of this section of our report.

VICE-SPEAKER BAILEY: Is there a second?

DR. DONALD CASS (Los Angeles): Second.

VICE-SPEAKER BAILEY: Dr. Burt Davis, will you speak to the question? You are the originator of both six, which has just passed, and seven which is up for debate.

DR. BURT DAVIS (Santa Clara County): In view of the fact that both of these resolutions pertain to the same subject, one being authorization for the

study of the problem, I differ slightly with the verbiage of the report, in that I claim it is a reputed problem and not necessarily actual.

In view of the fact the subject covered by the two resolutions is so closely interwoven and interrelated, I would move that the committee report be referred to the Council along with the previous resolution.

VICE-SPEAKER BAILEY: Is there a second to that?

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: That is a motion to refer this to the Council. Is there any debate on the motion to refer this to the Council? I hear none.

Those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: That, therefore, completes your report, Dr. Halley?

DR. HALLEY: Mr. Speaker, I now move the adoption of the report of Reference Committee No. 3 as a whole as amended.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: All those in favor of adopting the report as a whole as amended will say "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. HALLEY: I would like at this time to thank the members who served faithfully for three sessions on this committee with me. I also thank you who appeared at our meeting last December in the interest of these resolutions. I want to assure you it has been a pleasure to have tried to serve you. (Applause.)

VICE-SPEAKER BAILEY: Dr. Halley's committee made an all-time high in length of time of a Reference Committee.

. . . Announcements. . . .

VICE-SPEAKER BAILEY: The morning session is drawing to a close. We want, however, before adjourning to luncheon until two o'clock, to make a few announcements.

Under the circumstances, I would like very much to have the Speaker introduce the Past Presidents of the Association.

SPEAKER CHARNOCK: Ladies and gentlemen: Those Past Presidents who are present, will you stand, please.

Dr. George Kress. (Applause.)

I will say this is Dr. Kress' fiftieth anniversary.

Come up and say a word, Dr. Kress.

PAST PRESIDENT KRESS: Mr. Speaker and members of the House of Delegates: I can only express to you and the other members of the profession who sit here, after many, many years of service in the profession, my appreciation of the honor that you have extended in asking me to come to the platform.

My memory goes back over a great many meetings of the House of Delegates. One of these days, perhaps we will put it all in written word, to outline the procedures of days gone by when things did not move along with quite the smoothness that has been evidenced here this morning.

I have been very much impressed with the ability of members of the House of Delegates in their capacity to express to you all in such clarifying manner the business that is before you.

I realize as I grow older that the problems of medicine never grow less.

Thank you very, very much. (Applause.)

SPEAKER CHARNOCK: Thank you very much, Dr. Kress.

Dr. Edward Ewer.

Dr. Lyell Kinney, a member of the House. (Applause.)

Dr. Junius Harris.

Dr. George Reinle. We have seen him up here this morning. (Applause.)

Dr. Robert Peers.

Dr. Harry Wilson.

Dr. William R. Molony, Sr.

Dr. Karl Schaupp.

Dr. Lowell Goin.

Dr. Sam McClendon. (Applause.)

Dr. John Cline. (Applause.)

Dr. E. Vincent Askey. (Applause.)

Dr. R. Stanley Kneeshaw. (Applause.)

Dr. Donald Cass. (Applause.)

Dr. H. Gordon MacLean. (Applause.)

. . . Announcements. . . .

SPEAKER CHARNOCK: We are now in recess until 2:00 o'clock.

. . . The Sunday morning session adjourned at 12:00 o'clock noon. . . .

Sunday Afternoon Session

The Sunday afternoon session of the House of Delegates, California Medical Association. was called to order at 2:00 o'clock in the Renaissance Room of the Biltmore Hotel by Speaker Donald A. Charnock, who presided.

SPEAKER CHARNOCK: Will the House please be in order.

We have two or three announcements to make.

. . . Announcements. . . .

SPEAKER CHARNOCK: At this time it is a great pleasure to present to the House of Delegates six members from our Student American Medical Association.

I am going to ask the young gentlemen to stand up here in front as their names are called.

Don Casebalt and William Tryon, from the College of Medical Evangelists. (Applause.)

Les Smith and Wallace Sampson, from the University of California at San Francisco. (Applause.)

Bruce Nichols and George Mulfinger, from the University of Southern California. (Applause.)

I am going to ask Don Casebalt if he will speak one word for the entire group.

DON CASEBALT: I know I speak for all of us when I say it is a real pleasure and privilege for us to

attend the meeting of the House of Delegates and see how organized medicine works.

I would like to say a word of thanks to you for Bruce Nichols and myself for sending us to the Convention in Chicago. As most of you know, the California Medical Association footed the bill for our going, and we appreciated that.

We are glad to be here today. Thank you. (Applause.)

SPEAKER CHARNOCK: Thank you, Don Casebalt, and you other gentlemen very much.

The next order of business will be the report of Reference Committee No. 4. Dr. Arthur Kirchner, chairman, reporting.

REPORT OF REFERENCE COMMITTEE No. 4

DR. KIRCHNER: Your Reference Committee No. 4 is composed of Dr. Wayne P. McKee, Dr. Albert G. Miller, and myself.

As you know, one of our perplexing problems has been the elimination of the Interim Session. We are up here the third time on this problem. We have batted perfectly for recent admissions.

You recall that at the Interim Session, Dr. Robertson Ward of the San Francisco delegation submitted a By-Law amendment, in which he asked that the Interim Session be cancelled by a two-thirds vote of the Council.

Well, after considerable debate it was decided to resubmit to the committee, and you asked the committee to return something that would be more suitable.

So, here we are again, and it seemed to the committee that the House of Delegates desired some acceptable middle ground between the elimination of the Interim Session on the one hand and its mandatory convening on the other.

The committee felt that many delegates do not want the decision each year to rest with the Council or the officers of the Association.

As the middle-of-the-road decision, the committee offers the following new substitute for Dr. Ward's By-Law Amendment No. 3.

Resolved, That Section 7 of Chapter V of the By-Laws of this Association, California Medical Association, be amended by adding the following new sub-section thereto:

(e) Prior to the Annual Session in each year, the Council may elect to recommend to the House of Delegates that the Interim Session for such year be cancelled. If such recommendation is made, it shall be presented to the House of Delegates at its first meeting during the Annual Session prior to the introduction of resolutions, and the House shall thereupon vote to accept or reject said recommendation. If said recommendation is accepted, then the Interim Session for that year shall be deemed cancelled; in which event all resolutions and new business introduced at the Annual Session may be acted upon thereat, and the requirement in Sub-Section (c) above that non-emergency resolutions must not be acted upon until the next session shall not apply.

You will note the new proposal gives a vote to the House of Delegates. Such a vote must occur early in the Annual Session in order to avoid confusion as to whether non-emergency resolutions may lie on the table until the next session or may be introduced and voted upon at that time. This substitute amendment gives the opportunity to eliminate the Interim Session in any year it is deemed inadvisable to hold it, and at the same time does not deprive the House of Delegates of the authority to make the final decision.

Now, this is a new By-Law amendent and for that reason cannot be voted upon at this time, and will be voted upon Wednesday.

This is the last report of Reference Committee No. 4, and we, like Three, have been up here three times. We want to thank all of you who have appeared before us. We want to thank the Legal Counsel, the Executive Secretary's office for the many revisions that had to be made, and so on; and for all of you who have been so very patient with us in presenting these By-Law and Constitutional amendments.

Thank you.

SPEAKER CHARNOCK: Thank you, Dr. Kirchner.

As Dr. Kirchner related to you, this is an entirely new amendment to the By-Laws, and will lie on the table until Wednesday.

The next order of business is the report of Reference Committee No. 1, Dr. Douglass Batten reporting.

REPORT OF REFERENCE COMMITTEE No. 1

DR. BATTEN: Mr. Speaker, and members of the House of Delegates:

Two matters of business were placed before this Reference Committee at the Interim Session of the California Medical Association held in San Francisco, December 1952. They were:

1. Final report on recommendations Nos. 4 to 14 of the C.M.A.-C.P.S. Study Committee Report and

2. A resolution submitted by Dr. Frederic P. Shidler of Menlo Park, California.

With the permission of the House, Mr. Speaker, I should like to consider Dr. Shidler's recommendation first, contrary to the matter as published.

SPEAKER CHARNOCK: That is within your privilege.

DR. BATTEN: The author of this resolution, Dr. Shidler, has asked me to express for him the fact that he wishes to withdraw the resolution completely from the House of Delegates. Therefore, it requires no action.

SPEAKER CHARNOCK: Unless there is an objection from the House, we will withdraw this portion of the report; otherwise, we will vote upon it.

Hearing no objection, it is withdrawn.

You may proceed.

DR. BATTEN: Thank you.

This committee has again considered in detail the C.M.A.-C.P.S. Study Committee Report. A few communications concerning it have been received.

This committee is again deeply impressed with the tremendous amount of effort, time, and sacrifice that must have gone into the preparation of this far-reaching report. Its searching and astute observations in the field of insurance and medical practice are impressive. It is felt that in these days of unrest and changing social conditions with their impact upon the physician and his method of practice that such a plan as outlined in the C.M.A.-C.P.S. report would provide the beginnings of an answer to a problem with which the medical profession must concern itself more and more in the coming months.

One of the many valuable features of the report that this committee wishes to commend is the retention within the structure of C.P.S. of the service-type plan of prepaid, voluntary health insurance; while at the same time permitting that organization to delve into the relatively unexplored aspects of the indemnification type of Blue Shield insurance in California.

Another feature of the report on which this committee cannot help but pass comment is the very wise retention throughout of free choice of physician by the patient and the continuance of the unhampered and unfettered physician-patient relationship that has existed throughout medical practice.

We feel that the C.M.A.-C.P.S. plan has great merit.

This committee believes it would be advantageous for the various component medical societies to undertake promptly the basic work of establishing fee lists for use in their respective areas. The committee also feels that it would be advisable for those counties wherein the membership is strongly in favor of these proposals to initiate such a program at the earliest opportunity. In this manner experience and additional valuable information could be gained.

It is the considered opinion of this committee that any definite action on the part of the House of Delegates concerning the specific recommendations 4 through 14 would be premature at this time and should not be undertaken. The committee feels that the program would be successful only where a strong majority of doctors were in favor of it and that therefore it should be tried first only in specific counties where such a majority exists.

There was established by this House of Delegates at the regular meeting in 1952 a Medical Services Commission which is charged in part with these duties:

"To study, keep records upon and recommend action to the C.M.A. and its component bodies on all types of prepaid medical care; including C.P.S., insurance company plans, industrial accident schedules, union labor plans, voluntary-compulsory governmental and non-governmental plans."

This commission, through its regularly functioning channels of information is constantly being advised of the latest developments in the field of insurance, labor union-management negotiations, prepaid health schemes, and the new colossus on the horizon—the Department of Health, Education and Welfare.

This permanent commission, composed of respected and esteemed physicians throughout the state, can readily advise and coordinate the various county medical societies in their attempts to establish such a fundamental revision in the practice of medicine as is proposed in the C.M.A.-C.P.S. report.

It also appears to us that the Medical Services Commission is in an especially advantageous position to advise the Council of the C.M.A. upon matters of public and professional education as proposed in recommendations Nos. 10 and 11.

This committee therefore recommends that the C.M.A.-C.P.S. Study Committee report be referred to the Medical Services Commission for further study and such action as that body may deem advisable and necessary.

This committee further recommends that any component county medical society which wishes to institute an active program in accordance with these proposals do so under the guidance and with the cooperation of the Medical Services Commission.

It is suggested that the Medical Services Commission report to the House of Delegates through the Council of the C.M.A. at the next session of the House of Delegates concerning any additional information or experience which may have been acquired concerning the program and to make any additional recommendations the commission may then deem advisable.

Mr. Chairman, I move the adoption of this section of the report.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It is now open for discussion.

Dr. Sherman, from San Francisco!

DR. SAMUEL R. SHERMAN (San Francisco): Mr. Chairman, members of the House of Delegates: I hereby wish to submit the following amendment to the C.M.A.-C.P.S. Study Committee report that any place in this report where reference is made to a fee schedule or a fee list, it be firmly understood that such fee schedule or fee list shall be subject to review and revision by duly appointed members of the medical profession at least every two years, and that such revision be tied to the current cost of living of the United States Bureau of Labor Statistics.

I make this amendment because of the fact that if such fee schedules are adopted in this report, we would be bound by a rigid fee schedule which would perhaps act as a millstone around our neck. With this safeguard, such an objection would, therefore, be obviated. Thank you.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: There is a second.

Do you want to vote on this amendment now? Is there any discussion on it?

. . . The question was called for. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this amendment that Dr. Sherman has

just given be attached to the Report of Reference Committee No. 1.

Those who are in favor of the amendment will signify by saying, "aye."

... The motion was put to a vote and it was carried....

DR. JUSTIN J. STEIN (Los Angeles): I recommend this be referred to the appropriate committee for study, and be brought back to the Wednesday session for final action.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that this report be referred to the Reference Committee. The motion to refer has a higher precedence than the motion, and it has been moved and seconded. I am going to ask Dr. Bailey to explain this to you.

VICE-SPEAKER BAILEY: Mr. Chairman, we all know that it is the job of the Speaker and Vice-Speaker to try to make things flow as smoothly as possible. We know the county societies have talked this over at great length. Many of the caucuses of the different counties have not had a chance to talk among themselves. We also know there are a number of amendments coming up on this same subject. So, it would seem, with the permission of the committee which originated this report, that we should put the whole thing together and come out with something definite, by sending it all to the C.P.S. Reference Committee. That doesn't mean by any means it is being postponed indefinitely. It is being postponed definitely, so the whole thing can be taken up at once before the C.P.S. Committee.

That is the object of this motion, as I understand it, Dr. Stein?

DR. STEIN: Yes.

VICE-SPEAKER BAILEY: Then the motion is before you to refer this to the C.P.S. Committee.

SPEAKER CHARNOCK: Now, is there any discussion about referring this to the C.P.S. Reference Committee?

DR. L. HENRY GARLAND (San Francisco): A point of order, Mr. Speaker. Do you mean refer the report as amended?

SPEAKER CHARNOCK: Refer the report as amended to the C.P.S. Reference Committee. Is there any discussion?

A MEMBER: A point of information.

SPEAKER CHARNOCK: What is your point of information?

SAME MEMBER: When would that committee report back?

SPEAKER CHARNOCK: Wednesday.

A MEMBER: That is what I wanted to know.

SPEAKER CHARNOCK: The committee would report back Wednesday.

A MEMBER: Will we have an opportunity now to know all the proposed amendments to it, or will this stop any other amendments that may be offered on this floor?

SPEAKER CHARNOCK: No, you can put the amendments in when we call for new business.

Is there any more discussion?

... The question was called for....

SPEAKER CHARNOCK: Dr. Batten, do you want to discuss this any further?

DR. BATTEN: No, sir.

SPEAKER CHARNOCK: The motion now is to refer this report to the C.P.S. Reference Committee. Those who are in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is referred.

DR. BATTEN: In closing, I simply wish to thank the members of the committee, Dr. James W. Moore and Dr. Roland R. Jantzen for their steadfast help throughout the last six months in completing this report. (Applause.)

SPEAKER CHARNOCK: I think we ought to give a great vote of thanks to all these committees that have been working through these sessions.

The next order of business is to call upon the Secretary for any old or unfinished business.

SECRETARY DANIELS: None.

SPEAKER CHARNOCK: There is no old or unfinished business.

The next order of business is new business, and before we go into that I should like to repeat to you that the mechanism for turning in emergency resolutions is as follows: Under Chapter V, Section 7, Paragraph (d) of the By-Laws, emergency resolutions must be designated so by the proposer and read before the House by the proposer. The House will then vote whether or not it sees fit to make this an emergency resolution. This vote must be by a two-thirds vote in order to make it an emergency resolution. If the two-thirds vote is in the affirmative, it is sent to the Reference Committee and brought back to the House at the Wednesday meeting. A two-thirds vote will be required for passage. If the proposition is of such grave emergency, it is within the discretion of the Chair to have you vote on it immediately.

If the House does not consider that the resolution or proposition is of an emergency nature, then the resolution is lost.

However, the member may reintroduce this as a regular resolution during the time of introducing resolutions, and at that time it will lie over as the ordinary resolutions.

I will now recognize Dr. Sidney Shipman, who will make resolutions on behalf of the Council.

RESOLUTIONS AND AMENDMENTS

DR. SIDNEY SHIPMAN (San Francisco): Mr. Speaker, members of the House: The first resolution that I would introduce this afternoon on behalf of the Council is an amendment to the Constitution which, of course, will have to lie over for a year.

You may not have noticed, but the Councilors-at-Large are not actually members of this House at the present time, and we wish to make them such. To that end:

Resolved, That Article III, Part A, Section 1 of the Constitution of this Association, the California Medical Association be amended by striking out the word "District" in sub-section (c) of said Section 1, so that Section 1 will read as follows:

"Section 1.—Composition

"The House of Delegates shall consist of:

"(a) Delegates elected by the members of component societies;

"(b) Officers of the Association as hereinafter provided:

"(c) Ex officio, with the right to vote, the Councilors, and

"(d) Ex officio, without the right to vote, the Past Presidents."

SPEAKER CHARNOCK: This will be referred to Reference Committee No. 4, and will lie over until the next session.

DR. SHIPMAN: The second is a resolution which has to do with certain special technicians and skills such as technicians in nuclear energy, people who deal with encephalograms on a technical basis and that sort of thing:

WHEREAS, It is imperative for the development of scientific medicine that well-trained and qualified people with special skills, postgraduate training and higher degrees such as Ph.D., work with doctors of medicine in developing new methods of treating the ill and aid in the measuring of these new methods after they have been developed; and

WHEREAS, These people with special skills, regardless of proficiency in a particular field, are, nevertheless, not trained in the over-all skills embraced within medicine and surgery; now, therefore, be it

Resolved, That the medical profession recognize these special skills and urge that they be used at all times and that people with special skills, postgraduate training and higher degrees, such as Ph.D., be allowed to analyze all functions of the body, the excretions and secretions of the body, or make any other measurement with instruments on the body for statistical purposes in cooperation with doctors of medicine; and, be it further

Resolved, That in no instance, except where specifically prescribed by law, should these people of special skills, postgraduate training and higher degrees such as Ph.D., be permitted to make diagnoses or render diagnoses to doctors of medicine, hospitals, clinics, et cetera; and, be it further

Resolved, That such persons with special skills shall not prescribe for the patient, but that the prescribing of new medicine or medicines requiring the technical skills of these people with special skills, postgraduate training and higher degrees such as Ph.D., be done only by medical doctors and that the care of the people receiving these medicines be under the direction and immediate care of the doctor of medicine so prescribing.

I would like to make this an emergency.

SPEAKER CHARNOCK: This has been proposed as an emergency resolution. It has been moved. Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept this as an emergency resolution. Is there any discussion?

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It will be referred to Reference Committee No. 3 as an emergency resolution.

DR. SIDNEY J. SHIPMAN: The next refers to the Committee on Medical Defense which, as most of you know, has not been active for a good many years:

Resolved, That Chapter VII, Section 1, of the By-Laws be amended by deleting sub-section (c) and relettering the other sub-sections that follow; and be it further

Resolved, That Chapter VII, Section 10 be deleted from the By-Laws of the California Medical Association, with the provision that the following sections shall be renumbered in proper fashion.

It merely brings the matter of this Committee on Medical Defense in proper focus at the present time.

I would like to make this an emergency.

SPEAKER CHARNOCK: That is an amendment to the By-Laws, and will go to Reference Committee No. 4, and will come before the House on Wednesday.

DR. SIDNEY J. SHIPMAN: The next has to do with Dr. Alesen's committee.

WHEREAS, Initiated by Council action, a special Joint Blue Cross-Blue Shield Committee composed of representatives of H.S.S.C., C.P.S. and H.S.C., is currently exploring the possibilities of close cooperation between these professionally sponsored prepayment plans; and

WHEREAS, It is obviously in the best interest of the public, hospitals and medicine alike that the services offered by these plans shall be most efficiently rendered and be made available to everyone who needs them at a price and in a manner that will effectively furnish prepaid health care on a voluntary basis with full freedom of the public's choice of physician and hospital; now, therefore, be it

Resolved, That the Boards of Directors of these three plans be urgently requested to participate actively and wholeheartedly in an attempt to unite and coordinate their offerings in the most feasible and practicable plan available.

I would like to make this an emergency also.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this be made an emergency. Is there any discussion?

Those in favor signify by saying, "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is passed, and declared an emergency and referred to Committee No. 3.

DR. SIDNEY J. SHIPMAN: This is the final resolution:

WHEREAS, Don Cass is completing the maximum six years of service permitted members of the Board of Trustees of California Physicians' Service; and

WHEREAS, He has given unstintingly of his time, effort, and talents without regard to the personal sacrifices involved; and

WHEREAS, This service has been of tremendous benefit to California and California Physicians' Service in this most important period of its development; now, therefore, be it

Resolved, That this House of Delegates express to Donald Cass its sincere gratitude for his work in the public service and to the medical profession alike.

Obviously, this is an emergency. (Applause.)

SPEAKER CHARNOCK: Gentlemen, according to the By-Laws, it has been moved and seconded that this resolution be declared an emergency.

Those who are in favor of such will signify by saying "aye."

... The motion was put to a vote and it was carried unanimously....

SPEAKER CHARNOCK: It is within the discretion of the Chair to have you vote immediately on this.

Those who are in favor of this resolution will please stand.

... Standing applause....

SPEAKER CHARNOCK: Dr. Stein.

DR. JUSTIN J. STEIN: Mr. Speaker, members of the House of Delegates: I wish to make this resolution an emergency resolution because, as most of you know, when the doctor draft law was first introduced, some of us lukewarmly supported it, feeling it was very urgent. But, at the present time, as you know, the Armed Forces wish to continue it for two years, and some for a longer period, and we definitely believe this law should be stopped as quickly as possible.

WHEREAS, The Doctor Draft Law No. 799, 81st Congress, is discriminatory legislation against physicians, dentists and veterinarians; and

WHEREAS, The passage of the Doctor Draft Law originally was recommended only with the consideration that it not be made permanent; and

WHEREAS, During the operation of the Doctor Draft Law many inequities and injustices have been noted; now, therefore, be it

Resolved, That the President of the California Medical Association be authorized to immediately notify the Armed Forces Committee of the House and Senate, the Director of Selective Service, and the chairman of the Health Resources Advisory Committee of the Office of Defense Mobilization and other appropriate officials of the following:

That inasmuch as the American Medical Association has studied the law in its present operation and has called the attention of Congress to the inequities and injustices and have made recommendations for the deletion of the inequities and injustices in the new law, it is urged that the recommendations of the American Medical Association be incorporated in the new Doctor Draft Law.

SPEAKER CHARNOCK: It has been moved that this be presented as an emergency. Do I hear a second?

... The motion was seconded....

SPEAKER CHARNOCK: Is there any discussion?

Those who are in favor of the introduction of this resolution as an emergency will signify by saying "aye."

... The motion was put to a vote and it was carried.

SPEAKER CHARNOCK: It is accepted as an emergency resolution and sent to Reference Committee No. 3.

DR. JUSTIN J. STEIN: This is introduced as an emergency resolution because the California State Legislature at the present time is considering drastically curtailing civil defense funds:

WHEREAS, The needs for civil defense are just as urgent now as ever before; and

WHEREAS, Every effort must be made to insure the adequacy of civil defense measures for the civilian population; now, therefore, be it

Resolved, That the California Medical Association so notify the California State Legislature and urge that there be no curtailment of funds which will impair the efficiency of civil defense.

SPEAKER CHARNOCK: Is there a second to placing this as an emergency?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that this resolution be accepted as an emergency.

Those who are in favor will signify by saying "aye."

... The motion was put to a vote....

SPEAKER CHARNOCK: The Chair is in doubt. Those who are in favor of accepting this resolution as an emergency will raise their hands.

... The motion was voted on by a show of hands, and it was carried....

SPEAKER CHARNOCK: The motion is won, and it is referred to Reference Committee No. 3 as an emergency.

DR. JUSTIN J. STEIN: This final resolution should also be considered as an emergency:

WHEREAS, Physicians in the Armed Forces have frequently been used for non-medical duties; and

WHEREAS, The ratio of physicians in the Armed Forces to personnel is too great; now, therefore, be it

Resolved, That the California Medical Association request of the Secretary of Defense that better utilization of physicians in the Armed Forces be carried out and that there be a reduction in the amount of non-military medical care and that greater use be made of contract physicians and of existing private medical facilities.

SPEAKER CHARNOCK: Is there a second to accepting this as an emergency resolution?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that this resolution go in as an emergency. Those who are in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted as an emergency resolution and sent to Reference Committee No. 3.

Does anybody else have any more resolutions?

DR. LESTER LAWRENCE (Alameda-Contra Costa): Mr. Speaker, members of the House of Delegates: I would like to present a resolution pertaining to the economics of the practice of medicine:

WHEREAS, The doctor's personal economy exists within a general economy based upon business and industrial concepts of capital investments and their amortization, operating and production costs, recognized depreciation tables and other factors of modern accounting methods and principles; and

WHEREAS, Medicine has thus far failed to translate its economy into these terms; and

WHEREAS, Medicine must now make its economy understandable so that it can explain and defend fees as based upon the cost of production and delivery of its services; so that it can insist upon taxes computed in equity with consideration for educational capitalization and its amortization; and so that it can gain recognition for reasonable reserves for retirement based upon tables of normal years of production; and

WHEREAS, Accountants of standing and experience inform us that much of the economics of medicine can be reduced to terms and methods, statements and reports of modern accounting; therefore, be it

Resolved, That the Council of the California Medical Association be asked to retain business analysts and accountants as needed to conduct a study for the purpose of translating into present tax and business language and reports the economics of the doctor of medicine; and, further, be it

Resolved, That the initial goals of this study shall be:

1. Establish costs as related to fees.

2. Capitalize the cost of a professional education and the forebearance of income during the educational period, and establish reasonable tables for amortization of these factors.

3. Determine the normal expectancy for years of active practice.

4. Determine minimum retirement funds that should be accumulated and how this cost should be reserved.

5. Establish accounting systems for medicine which can be used to substantiate requests for legislative relief and equity for the doctor of medicine.

SPEAKER CHARNOCK: This will be referred to Reference Committee No. 3.

Dr. Ludwig.

DR. LAFE LUDWIG (Los Angeles):

WHEREAS, The medical schools of the United States are closing each school year with a considerable financial deficit; and

WHEREAS, Such continued practice will eventually lead to government subsidies and intervention in the administration of said medical schools; and

WHEREAS, The doctors of medicine, graduates of said schools, are trained at a rate below actual cost; and

WHEREAS, Voluntary contributions from California physicians have averaged only about $1.00 per capita per annum; therefore, be it

Resolved, That the dues of the California Medical Association be increased $25.00 per year; said monies to be used to support the American Medical Education Foundation.

SPEAKER CHARNOCK: This will be referred to Reference Committee No. 2.

Dr. de los Reyes.

DR. J. M. DE LOS REYES (Los Angeles): Mr. Chairman:

WHEREAS, The greatest privilege that any individual may have is American citizenship; and

WHEREAS, It has become evident in these perilous times that all important organizations should have their membership imbued with the true feelings of real Americanism; and

WHEREAS, The largest component unit of the California Medical Association, to-wit, the Los Angeles County Medical Association, requires all its active members to be American citizens; therefore, be it

Resolved, That the By-Laws of the California Medical Association be amended as follows:

That Section 3, Chapter 2 of said By-Laws will have an added sub-paragraph (e) "Required that membership of all classes is hereby limited to citizens of the United States."

I want to make this an emergency resolution, Mr. Chairman.

SPEAKER CHARNOCK: I don't think that needs to be declared an emergency. It will be sent to Reference Committee No. 4 and brought back to the House on Wednesday. It cannot be done before anyhow.

DR. DE LOS REYES: Thank you.

My second resolution. This resolution is presented

because many of the members of the Congress of the United States would like to know the opinion of some of the bodies like the California Medical Association.

WHEREAS, Every American physician has a double interest in the newly created Department of Health, Education and Welfare, because it affects him professionally as a citizen; and

WHEREAS, The entire Department of Social Security has for years been operated as a deliberate deception and fraud upon the American public in that approximately seventeen billion dollars of old age and survivors trust funds have been transferred to the general fund and used in pursuit of numberless nefarious socialistic schemes while the employee from whom these taxes were collected was led to believe that they were held in trust for him against the day when he should need them when as a matter of fact these funds are represented only by government IOU's; now, therefore, be it

Resolved, That the House of Delegates of the California Medical Association urge the Congress of the United States to speed and accelerate in every manner possible a thorough-going investigation of the entire Social Security program to the end that it may be placed upon an honest and actuarial basis; and be it further

Resolved, That the California delegation to the American Medical Association be instructed to present this resolution to that House at its meeting in New York, June 1 to 5; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, to the members of the Cabinet, and to each member of the Congress.

Do I have to vote this as an emergency to receive it Wednesday?

SPEAKER CHARNOCK: Yes.

DR. DE LOS REYES: I ask it be placed as an emergency.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded this be placed as an emergency resolution. Those in favor say "aye."

. . . The motion was put to a vote. . . .

SPEAKER CHARNOCK: The Chair is in doubt.

Those in favor please vote by raising your hands.

. . . A vote was taken by show of hands. . . .

SPEAKER CHARNOCK: It is declared an emergency by a two-thirds vote.

Dr. de los Reyes talked about seventeen billion dollars. I thought this should go to Reference Committee No. 2, but we will put it to No. 3.

DR. LYLE G. CRAIG (Los Angeles): Mr. Speaker: I would like to introduce an emergency resolution at the request of the executive committee of the medical staff of the Huntington Hospital:

WHEREAS, There has developed in the United States a marked shortage of interns available for private hospitals, due in part at least to the increasing demands of public, military, and veterans' hospitals; and

WHEREAS, If the private practice of medicine in the United States, to which the American Medical Association is dedicated, is to survive, our newly graduating doctors must not only receive adequate scientific clinical instruction and experience, but must also learn something of the art and economics of private practice, with its highly important personal doctor-patient relationship with its obvious advantages to society; and

WHEREAS, These factors essential to the preservation of our heritage and to the welfare of the public can be far more adequately learned by the intern in our many excellent private hospitals, which can furnish adequate scientific instruction and experience as well; and

WHEREAS, The report of the Advisory Committee on Internships of the Council on Medical Education and Hospitals of the American Medical Association which report has been accepted and published in the *Journal* as the basis for the approval of hospitals for intern training, obviously sets up requirements that can be met only by the larger hospitals affiliated with medical schools, and is definitely prejudicial to the interests of the hundreds of splendid private hospitals, who will find it impossible under its rulings to qualify for intern training; now, therefore, be it

Resolved, That this House of Delegates of the California Medical Association instruct our delegates to the American Medical Association that they shall introduce into the House of Delegates of that organization a resolution that there shall be appointed a new committee for the further study of this problem—one with a more realistic attitude and sympathy with the principle of private medical practice and hospital care—such committee to review and revise the recommendations of the Council on Medical Education and Hospitals, in order that continued opportunity may be given to private hospitals to provide the excellent intern training that they have furnished in the past.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this resolution be accepted as an emergency. Those in favor signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted and referred to Reference Committee No. 3.

DR. LYLE G. CRAIG (Los Angeles): This resolution is also designated as an emergency, and is introduced by request:

WHEREAS, The advertising of therapeutic agents in the official journals of the American Medical Association carries great prestige with the medical profession and the public at large; and

WHEREAS, All methods of promotion of any prod-

uct bearing the seal of one of the Councils of the American Medical Association are under control of said Council; and

WHEREAS, Some pharmaceutical manufacturers have failed to take proper cognizance of their grave responsibility in promotion of their products and have tended during the past few years to over-advertise and over-commercialize new therapeutic agents both in official journals of the American Medical Association and through direct mail advertising to physicians throughout the United States; and

WHEREAS, A petition is being presented to the House of Delegates of the American Medical Association in the form of a resolution calling upon officers and committees to exercise great care in the selection of advertising and material from pharmaceutical firms which do not strictly conform with the standards and principles of the Association; now, therefore, be it

Resolved, That this House of Delegates instruct the Delegates to the American Medical Association House of Delegates to work diligently for the enactment of such legislation as will protect the public and the good name of scientific medicine.

I ask this be made an emergency.

SPEAKER CHARNOCK: Is there a second?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that this be declared an emergency.

DR. ROBERTSON WARD (San Francisco): Can we discuss whether this becomes an emergency or not?

SPEAKER CHARNOCK: I am sorry, Dr. Ward. Your point is well taken.

DR. ROBERTSON WARD: We have missed the opportunity twice now to discuss whether these should become emergencies. I can't see any particular reason for making this an emergency. If we want to go back to the old system of putting all our resolutions before the Reference Committee at the time of their introduction, then we should well vote for this to be an emergency. If not, I can't see any particular reason why this should go as an emergency.

SPEAKER CHARNOCK: Is there any more discussion?

Those who are in favor of accepting this resolution as an emergency will signify by saying "aye."

... The motion was put to a vote....

SPEAKER CHARNOCK: The Chair is in doubt. Those in favor of accepting this as an emergency will put up their hands.

... The motion was put to a vote by a show of hands and it was lost....

SPEAKER CHARNOCK: The motion is lost.

DR. LOGAN GRAY (San Mateo): Mr. Chairman:

WHEREAS, The relation of physician to patient is intimate and personal; and

WHEREAS, The security of the patient is based partly on the feeling that his doctor and his doctor's medical society and associations possess an unconfused dignity; and

WHEREAS, The prestige of physicians, county medical societies, state associations, and the profession nationally has suffered because of an occasional premature publication of controversy between one segment of the profession and another over matters of major policy; and

WHEREAS, This taking the profession's problems to the public over the head of the profession has the effect of inviting a reaction against all physicians, to the eventual detriment of the patient; and

WHEREAS, The press and periodicals cannot be blamed, since they can only utilize such material as they received; now, therefore, be it

Resolved, That the C.M.A. adopt a policy which precludes publication of controversial issues by small or large groups of physicians, until such matters of important policy be decided by full and orderly deliberations of the county and state societies and that the medical profession be urged to settle its own problems without pitting one faction against the other in the public press and journals. (Applause.)

SPEAKER CHARNOCK: This will be referred to Reference Committee No. 3.

DR. MALCOLM TODD (Los Angeles):

Mr. Speaker: I should like to introduce this as an emergency resolution. This is on closed panel practice:

WHEREAS, Current standards of medical practice in the United States are unequalled elsewhere in the world; and

WHEREAS, Freedom of choice of physician, with direct and immediate physician-patient relationship, is essential if patients are to enjoy the best of medical care; and

WHEREAS, American medicine has endeavored in every possible way to make prepaid medical care available to the public on a voluntary basis; and

WHEREAS, In connection with certain prepaid medical care plans, a temporary and purely economic advantage seems to be afforded to an operation under a closed panel system with full or part-time salaried physicians; and

WHEREAS, The interjection of a third party in the physician-patient relationship is obviously undesirable, since the interest of the employer must necessarily be dominant, resulting inevitably in more or less interference with professional practices, as for example, limitation respecting certain procedures and/or materials, the utilization of nurses in lieu of physicians to an undesirable degree, et cetera; and

WHEREAS, While the corporate practice of medicine is illegal in California, the constructive objectives of such law are lost when, in the functioning of a closed panel system, there is superimposed a corporate overlord (or an all-powerful layman) with total and effective control of the closed panel

prepaid medical care plan and of all the employees thereof; and

WHEREAS, In connection with the functioning of these closed panel systems, there is a tendency, when groups are insured—and it is probably an absolute necessity if such systems are to continue to exist—to require that every employee in a given group be covered, thus making "captives" of many unwilling individuals; therefore, be it

Resolved, That the House of Delegates of the California Medical Association, after full consideration, because of the inherent threat to the high standards of medical practice and, particularly, because of the potential injury to individual captive patients, does now and hereby declare that the operation of such closed panel systems in prepaid medical care plans is undesirable and injurious to the public welfare. (Applause.)

Mr. Speaker, I introduce this as an emergency resolution.

SPEAKER CHARNOCK: Is there a second?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded this be introduced as an emergency. Is there any discussion? The Chair hearing none, will call for a vote.

Those in favor of declaring this as an emergency will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is referred to Reference Committee No. 3.

DR. PAUL V. MORTON (Santa Clara County): I wish to propose this as an emergency resolution:

WHEREAS, The ready availability of blood and blood derivatives has become a vital necessity to modern medical practice and therefore a matter of highest concern to the physician; and

WHEREAS, The independent operation of blood banks of all degrees of excellence throughout the nation by many different agencies, some lay and some medical, has resulted in confused incoordination with its consequent wastage of vast amounts of blood and in friction, competition and open enmity between blood banks and organizations operating blood banks; and

WHEREAS, The general public is confused, irritated, and critical of the varying methods of operation among blood banks in the same or contiguous areas; and

WHEREAS, The high level of civilian demand plus the great needs of the military establishment for blood makes unnecessary waste of blood an unforgiveable error; and

WHEREAS, The professional aspects of the drawing of blood, its fractionation, and its use as a therapeutic tool, must be under medical control, and such medical control on a national scale logically should be a function of the American Medical Association; and

WHEREAS, The American Red Cross has already been designated by government as the official blood recruitment and distributing agency for the nation, and already has demonstrated that its organization is well suited to recruitment programs, to the administration of supplies in meeting disaster relief and civil defense needs, and to the business administration of blood banks; and

WHEREAS, The present American Red Cross program of so-called "free" blood without requirement for replacement has made collection of adequate supplies difficult, has been a tremendous drain on Red Cross funds which might better be devoted to purposes more consistent with Red Cross functions, is inaccurate to the extent that blood is not free but is paid for by the community at large and by government by tax revenues, and is fundamentally inconsistent with the overwhelming belief of the medical profession that no kind of health care should be free to the recipient able to pay therefor; now, therefore, be it

Resolved, That the delegates to the American Medical Association from the California Medical Association be instructed to introduce and support in the House of Delegates of the American Medical Association appropriate resolutions pressing for a coordinated national blood bank program jointly operated by the American Medical Association and the American National Red Cross with the cooperation of other qualified and interested organizations on the following basis:

1. Medical aspects of blood banking shall be under the exclusive control of the medical profession.

2. Business administration, donor recruitment, stockpiling for civil defense and disaster relief, allocation of supplies to meet military needs, and public relations shall be matters of joint concern.

3. The theory of "free" blood shall be abandoned; instead, actual costs of processing shall be charged to the recipient able to pay, and financial penalties shall be applied for failure to replace blood.

4. Coordinated regional cooperative arrangements to improve distribution and avoid waste shall be implemented.

5. The national blood bank program shall be a financially self-supporting but non-profit arrangement operated in the national interest with the sole aim of promoting the widest availability of safe and usable blood and its derivatives.

SPEAKER CHARNOCK: This has been declared an emergency. Is there a second?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that this resolution be declared an emergency. Is there any discussion?

Those who are in favor of declaring this an emergency will signify by saying "aye."

... The motion was put to a vote....

SPEAKER CHARNOCK: The Chair is in doubt. Will those in favor put up their hands.

... The vote was taken by a show of hands, and the motion was carried. ...

SPEAKER CHARNOCK: The motion has won, and it is sent to Reference Committee No. 3.

DR. ALLEN HINMAN (San Francisco): My name is Allen Hinman. I am not related to Frank Hinman who is chairman of the San Francisco delegation.

I have been requested to present the following four resolutions submitted by members of our delegation and accepted by a majority of our delegation.

The first resolution:

WHEREAS, The passage of time has shown the mandatory Interim Session of the House of Delegates to be an unnecessary drain on the time of our Delegates and on the resources of our Association; therefore, be it

Resolved, That the By-Laws be amended to provide for an optional Interim Session, dependent solely on the need which may occur from year to year, by changing Chapter V, Section 7—"Sessions and Meetings"—of the By-Laws to read as follows:

SECTION 7—SESSIONS AND MEETINGS

(a) In each year there shall be one regular session of the House of Delegates, which shall be held in the first six months of each calendar year and be designated the Annual Session. The time and place of such session shall be determined by the Council as far as possible in advance and notice thereof published in the Journal of the Association.

(b) Prior to the Annual Session each year, the Council may elect to recommend to the House of Delegates that an Interim Session be held in the last six months of each year. If such recommendation is made it shall be presented to the House of Delegates at its first meeting during the Annual Session prior to the introduction of resolutions and the House shall thereupon vote to accept or reject said recommendation. If said recommendation is rejected, or if no such recommendation is presented, resolutions and other new business may be introduced and acted on during the current Annual Session. If said recommendation is accepted, and an Interim Session is to be held during the last six months of said calendar year, resolutions and other new business may be introduced at Annual and Interim Sessions of said year but shall not be acted upon until the next session of the House; provided, however, that any resolution designated as an emergency measure may be acted upon at the session in which it is introduced, as hereinafter provided.

(c) At every meeting of any session of the House of Delegates in any calendar year during which an Interim Session is to be held, as heretofore provided, the Speaker shall designate a time at which any member may request the permission of the House to introduce an emergency resolution for immediate consideration. Such permission shall require a two-thirds affirmative vote of the members of the House present and voting. Such permission having been granted, the resolution must be acted upon during that session of the House, and the Speaker may if necessary, and at his discretion, waive the rule of referring the resolution to a committee. The pasage of such emergency resolution shall require a two-thirds affirmative vote of all members present and voting and the action shall be final for that session.

(d) In addition to the Annual and Interim Sessions, special meetings of the House of Delegates may be called at any regular or special meeting of the Council, by a two-thirds vote of all the members of the Council, or by written call stating the object of the meeting, filed with the Secretary in the office of the Association and signed by one-half or more of the members of the House of Delegates. Upon the filing of such call with the Secretary, the Council shall within thirty (30) days thereafter fix the time and place for the holding of such special meeting and cause written notice thereof stating the object of the meeting to be sent by United States mail, postage fully prepaid, (laughter) to each member of the House of Delegates, addressed to him at his office or place of residence, as shown by the records of the Secretary's office, at least fifteen (15) days prior to the date of the meeting.

SPEAKER CHARNOCK: This is a By-Law change, and will be referred to Reference Committee No. 4 to be acted upon Wednesday.

DR. ALLEN HINMAN: This resolution is to foster improvement of National Defense with respect to military need:

WHEREAS, National Defense must continue to be paramount in the minds of the medical profession; and

WHEREAS, The science and profession of medicine is absolutely essential in National Defense; and

WHEREAS, In the past, until very recently, national military medical personnel needs have been met on a voluntary basis; and

WHEREAS, A state of affairs has come about whereby national military medical personnel needs must be met by draft; and

WHEREAS, Any system of drafting medical officers cannot be as valuable in defense as a voluntary system; and

WHEREAS, Any medical reserve officer program heretofore instituted has not given the reserve officer an even break in his training to assume military responsibility; and

WHEREAS, There has never been decent remuneration for the time consumption, the responsibility, and the wear and tear of the conscientious medical reserve officer; and

WHEREAS, It is the duty of the American Medical Association to point the way to a long term medical defense policy; therefore, be it

Resolved, That the House of Delegates of the California Medical Association instruct its delegates to the American Medical Association to introduce

and foster such resolutions as will tend to achieve the following:

1. Institute a long-term policy in the American Medical Association for the purpose of improving the position of the medical reservist.

2. To set up committees and other necessary permanent personnel to carry out proper negotiations and liaison with government and the American Legion, and otherwise to carry out such policy.

3. To expressly institute in this policy a demand for a fair share of the staggering defense budget to foster and subsidize a voluntary medical reserve corps sufficiently adequate to take care of national needs in time of war.

SPEAKER CHARNOCK: This will be referred to Reference Committee No. 3.

DR. ALLEN HINMAN: This resolution defines and clarifies the usage of the term "free choice of physician."

WHEREAS, The term "free choice of physician" is in regular usage to designate an unrestricted right of a patient to choose as his physician anyone in practice at the time the physician is needed; and

WHEREAS, Organized medicine in California has gone to great efforts to preserve the fullest right of free choice of physician in its own Blue Shield Plan and California Physicians' Service; and

WHEREAS, There is a certain grave danger to the right of good medicine when closed panel groups maintain that they are giving free choice of physician on the basis that there was a choice when the prepayment contract was sold, and that the patient has a right to choose his physician from the members of the closed panel; therefore, be it

Resolved, That the House of Delegates of the California Medical Association define the term "free choice of physician" as that unrestricted state between patient and physician in which the patient would have absolute freedom to choose a legally qualified physician or surgeon from all of those qualified to practice who are willing to give service under the conditions established, with no reduced benefits in the event that the beneficiary is treated by a physician who is not a member of his plan; and be it further

Resolved, That selection of a physician from a closed panel group at the time of purchase of the prepayment plan, before the need for treatment of illness or injury, does not fulfill the requirements of this definition; and be it further

Resolved, That this House of Delegates approve the above definition of free choice of physician as the only one acceptable in the California Medical Association; and be it further

Resolved, That the Council of the California Medical Association is hereby instructed not to permit any California Medical Association approval, implied or otherwise, of any individual, group, or corporation dealing in medical services or insurance unless free choice of physician is exercised according to this definition; and be it further

Resolved, That the Council of the California Medical Association is hereby further instructed to use all reasonable effort to inform and instruct the public in the basic tenets of this resolution. (Applause.)

SPEAKER CHARNOCK: This is referred to Reference Committee No. 3.

DR. ROBERTSON WARD (San Francisco): Mr. Chairman, has this been asked to be an emergency?

SPEAKER CHARNOCK: It has not been so asked.

DR. ROBERTSON WARD: May I move that this become an emergency, because the one referring to this previously introduced was also on the emergency list.

SPEAKER CHARNOCK: Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Is there any discussion?

It has been moved and seconded that this resolution be declared an emergency. Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted as an emergency and referred to Reference Committee No. 3.

DR. ALLEN HINMAN: Resolution on C.M.A.-C.P.S. Study Report:

WHEREAS, Current changes in the practice of medicine are fully recognized; and

WHEREAS, It is the responsibility of the medical profession to take the leadership in the formulation of standards of health insurance; and

WHEREAS, Because of the wealth of material and considered conclusions presented, the C.M.A.-C.P.S. Study Committee Reports should be kept fresh and vital in our minds as a source of information and as a guide in our continuing efforts to develop sound and equitable means of insurance against the cost of illness; and

WHEREAS, The objective of C.P.S. is to bring a high level of medicine to the public and also to serve as a measure for developing their methods of prepaid health insurance; and

WHEREAS, In order to obviate the necessity of any unsavory police system among us and to minimize the dissipation of insurance benefits through misuse and overuse, to broaden the accepted principle of patient-participation in meeting the cost of illness with co-insurance, particularly on a percentage basis; now, therefore, be it

Resolved, That this House of Delegates urge our Council, the Board of Trustees of California Physicians' Service, and the Medical Services Commission to use their good offices to foster and to continue the work which the C.M.A.-C.P.S. Study Committee has engendered.

SPEAKER CHARNOCK: This is referred to the C.P.S. Reference Committee.

VICE-SPEAKER BAILEY: Are there any further resolutions? Dr. Paul Foster, of Los Angeles.

DR. PAUL FOSTER (Los Angeles): This resolution is requested to be placed on the emergency basis be-

cause of the fact that the American Medical Association is going to take the subject up in about twenty days, and, therefore, they should have an expression from the California Medical Association:

WHEREAS, The practice of osteopathy has undergone a great change in the last ten or more years; thus, there are thirty states in the Union where by statute, referendum, or initiative enactment, provision has been made for full licensure of osteopathic physicians and surgeons with the same practice privileges as are enjoyed by Doctors of Medicine; there are twelve other states where there is still some limitation of practice privilege—limited to minor surgery, limited to surgery and obstetrics, limited as to the use of certain drugs, et cetera; and there are three states where an osteopath is limited to manipulation; and three states in which osteopathic practice is neither defined nor recognized; and

WHEREAS, In approximately one-half of the thirty states first mentioned above, there are two classes of osteopaths: those who obtained their licenses prior to the time that full training was required and those who obtained licenses after physicians' and surgeons' licenses became available—the former for limited licenses, no longer issued, and who ordinarily do nothing beyond manipulations; and as these, generally older, men die off, there will remain only licentiates with full practice privileges; and

WHEREAS, Standards are being raised in the colleges of osteopathy so that graduates are now generally required to take the same number of hours of premedical and medical training as are graduates of schools of medicine; and

WHEREAS, By reason of the liberalization and expansion of licensure privileges, more and more patients are being cared for by osteopathic physicians and surgeons in theoretical accordance with general medical and surgical principles; and

WHEREAS, The California Medical Association has recognized the importance, in the public interest, of enlarging the educational opportunities of the osteopathic physicians and surgeons, thus raising the standards of practice and improving the quality of medical care available to the people of California; and

WHEREAS, The House of Delegates of the California Medical Association has heretofore taken cognizance of this general problem, and, after mature consideration, concluded that the desirable ends would be attained by a rapprochement of the medical and osteopathic professions; now, therefore, be it

Resolved, That the view of the House of Delegates of the California Medical Association that the public interest would be well served by the study of possible closer coordination between the medical and osteopathic professions, is hereby reexpressed; and be it further

Resolved, That the Council of the California Medical Association and the Delegates of the California Medical Association to the House of Delegates of the American Medical Association are requested and urged to take any and all steps possible to effectuate the proposed study.

VICE-SPEAKER BAILEY: This is an emergency measure. Is there a second?

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Is there any discussion? Do you wish to discuss whether this should be an emergency or not?

DR. FREDERIC P. SHIDLER: Yes, sir.

Mr. Speaker, if I am not mistaken, one year ago we instructed the Delegates of C.M.A. to the National Convention to take all possible measures to hasten the amalgamation, if you will, of the osteopathic practice and the medical practice as we now know it.

It seems to me this particular resolution is redundant, and takes up more of our time on Wednesday. I don't recall having heard any report made from our Delegates to the American Medical Association on this matter; and since we have not heard any such report, I believe a further motion to repeat last year's motion will gain us nothing until these men tell us what they did last year.

I, therefore, don't consider this an emergency.

VICE-SPEAKER BAILEY: Thank you, Dr. Shidler. There has been action on it, to be sure, but we have had no report, at least, to this House.

Is there any further discussion whether this should be an emergency?

DR. DONALD CASS: Mr. Chairman.

VICE-SPEAKER BAILEY: Dr. Cass.

DR. DONALD CASS (Los Angeles): In order to answer the previous doctor, the Past President of the American Medical Association, Dr. John Cline from California presented this to the Reference Committee at the American Medical Association, and myself and several other of our Delegates attended and discussed this subject.

I believe Dr. Askey also discussed the subject at that Reference Committee, and progress was made up to the extent of a definition of the word "cult."

Dr. Cuniffe, who is the chairman of the Judicial Council of the American Medical Association, insisted as long as he was chairman of the council, the osteopaths would be declared cultists if they insisted they had something up their sleeve the other doctors didn't have.

We ran into a stalemate there, but rumor has it now that Dr. Cuniffe has retired from his active service on the Judicial Council (laughter) and I believe Dr. Cline and Dr. Askey and the rest of our delegation plan on making another pitch back there for this, and I think that the resolution is well taken. And I wish the doctor would realize that his Delegates to the American Medical Association have really been on the job.

VICE-SPEAKER BAILEY: You are in favor of it.

DR. DONALD CASS: I am talking for it.

VICE-SPEAKER BAILEY: You are talking for backing this as an emergency?

DR DONALD CASS: Yes.

VICE-SPEAKER BAILEY: Those in favor say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: The "ayes" have it.

Dr. Garland.

DR. L. HENRY GARLAND (San Francisco): Mr. Speaker, this is a resolution on medical care for veterans, and it is being introduced now because we have the second largest collection of veterans in the country in this state, and we may very soon have the largest:

WHEREAS, It is important that medical care of the highest quality continue to be available to all veterans with service-connected disabilities; and

WHEREAS, The growing number of veterans with non-service-connected disabilities is tending to dissipate the energies of the staffs of Veterans Administration Hospitals and Regional Offices; and

WHEREAS, The care of patients with non-service connected disabilities (with the possible exceptions of mental disease and tuberculosis) is not a recognized responsibility of the Federal Government; and

WHEREAS, There are today in most communities in this country adequate medical facilities for the care of persons, both veteran and non-veteran, with civilian complaints and injuries; and

WHEREAS, The cost of providing medical care is inevitably and understandably less under local civilian auspices than under centralized federal auspices; now, therefore, be it

Resolved, That this House of Delegates respectfully petition the Congress of the United States suitably to amend the law so that on and after January 1, 1954 (or as soon thereafter as is feasible) veterans with non-service-connected disabilities shall not be eligible for care in Veterans Administration institutions; and be it further

Resolved, That copies of this resolution shall be transmitted to all other state medical associations, and to the American Medical Association, with a request for consideration and adoption of similar recommendations, recommendations which we regard to be in the long-term interest of the disabled veteran and of the taxpayer.

VICE-SPEAKER BAILEY: Dr. Garland, that is an emergency, is it?

DR. L. HENRY GARLAND: No, sir, I don't really care. (Laughter.)

I, personally, think it is an emergency, but I don't wish to take the time of this House at this time.

VICE-SPEAKER BAILEY: If you move it an emergency, it can be acted upon now. If you ask it to take effect by January 1 next, it had better be discussed before December, hadn't it?

DR. L. HENRY GARLAND: Yes, Mr. Speaker. I then wish to move this resolution be declared an emergency.

VICE-SPEAKER BAILEY: Is there a second?

... The motion was seconded....

VICE-SPEAKER BAILEY: Those in favor of making this an emergency say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Hoffman.

DR. EUGENE HOFFMAN (Los Angeles):

WHEREAS, The American Medical Association has on two occasions memorialized the Congress of the United States to conduct a searching investigation into the inroads of the teaching of collectivism in our public school system; and

WHEREAS, A special subcommittee of the Senate is currently performing this task and has publicly exposed some startling facts concerning communism in some few of our teachers; and

WHEREAS, A special committee of the Association of American Universities has recently issued a report condemning the teaching of communism in our schools and deploring the fact that any of our teachers should be engaged in this practice, this report at the same time failing to mention the broader subject of collectivism as a whole; and

WHEREAS, Communism, while spectacular, represents only a very minor and comparatively insignificant phase of the general problem of collectivism, which, with its teachings of price and wage controls, agricultural subsidies, government housing, and a managed currency based upon an encouragement to the individual to deny responsibility for himself and to transfer that responsibility to the group, ultimately results in the regimented or totalitarian state by a process of gradualism, this ultimate result being in no manner different from that desired and achieved by the radical communist; now, therefore, be it

Resolved, That the American Medical Association is to be highly commended for its leadership in recommending this congressional investigation, and the Congress of the United States is to be similarly commended for its conduct of the investigation thus far to date; and be it further

Resolved, That a copy of this resolution be sent to the President of the United States, his Cabinet, and to every member of the Congress.

Mr. Speaker, I move this be declared an emergency.

DR. ROBERTSON WARD (San Francisco): I second the motion.

VICE-SPEAKER BAILEY: Is there any discussion on the motion whether this shall be an emergency?

All those in favor of so declaring it will say "aye."

... The motion was put to a vote....

VICE-SPEAKER BAILEY: The Chair is in doubt.

All those in favor please raise their hands.

... The motion was put to a vote by a show of hands, and it was lost....

VICE-SPEAKER BAILEY: The motion is lost. It re-

quires a two-thirds to carry. It is not an emergency.

Dr. Sloan!

DR. R. VARIAN SLOAN (Los Angeles): I wish to present this as an emergency resolution:

WHEREAS, The American College of Surgeons, through its paid spokesman, Paul Hawley, and through various of its regents and other officers, has been conducting through the pages of the public press and other media, a campaign of vilification of medicine in general by implying that all ghost surgery, unnecessary and incompetent surgery is being performed on the public by all physicians other than those who are Fellows of the American College of Surgeons or Diplomates of the American Board of Surgery; and

WHEREAS, The dignity of the profession and the confidence of the public in the medical profession has suffered immeasurably because of these intemperate and unfounded accusations by these individuals; be it

Resolved, That this House of Delegates censure these representatives of the American College of Surgeons and that a resolution be presented to the American Medical Association House of Delegates by the California delegation censuring the actions of these individuals.

I move this be considered an emergency resolution. (Applause.)

... The motion was seconded....

VICE-SPEAKER BAILEY: It has been moved and seconded this be declared an emergency resolution. Is there any discussion?

The Chair will put the question.

All those in favor of making this an emergency will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Rochex.

DR. FRANCIS ROCHEX (San Francisco): This is a resolution for the purpose of initiating action to improve the legal position of organized medicine:

WHEREAS, Organized medicine previously devoted its entire efforts to promote the science and art of medicine and in protecting the public health; and

WHEREAS, Medicine has lacked vision in anticipating the extent of penetration of political and socialized pressure groups; and

WHEREAS, Our inert and defensive action heretofore has encouraged these organized forces to endeavor to seize from us actual controls; and

WHEREAS, Our counter measures, hastily conceived and without purposeful organized procedure have caused us to be conciliatory, thus resulting in impaired public relations and loss of prestige in general; and

WHEREAS, There apparently now has been some abatement from government interference, the time seems to be propitious to be constructive and aggressive in action; now, therefore, be it

Resolved, That the House of Delegates approve formulation of plans that will preserve the independence of the practitioner, maintain the quality of medical care, and at the same time meet the just demand for some type of prepaid medical service; and be it further

Resolved, That the C.M.A. delegation to the A.M.A. be requested to make an effort to have legal counsel of the A.M.A. (1) review and restudy the laws (as the anti-trust laws) that hinder in any way the actions of organized medicine in endeavoring to maintain its integrity; (2) consider the feasibility of amending existing laws or sponsoring new legislation to accomplish this end.

Mr. Speaker, may I make a comment about the question of emergency resolutions?

It is my impression that this was included in our Constitution to prevent hasty action on important material presented before this House.

I do not consider this to be an emergency in the true sense of the word. However, since it envisions a long-term program, I believe that it should receive consideration at this time so that it may be acted upon at the coming meeting of the American Medical Association.

VICE-SPEAKER BAILEY: Then there is a motion to make it an emergency.

Is there a second to that?

... The motion was seconded....

VICE-SPEAKER BAILEY: Is there any discussion whether it should be an emergency or not? I hear none.

Those in favor of making it an emergency will say "aye."

The motion was put to a vote.

VICE-SPEAKER BAILEY: The Chair is again in doubt. Those in favor will raise their right hands.

... The motion was put to a vote by a show of hands and was lost....

VICE-SPEAKER BAILEY: The motion is lost. It requires two-thirds.

Dr. Leon Parker, from San Francisco.

DR. LEON PARKER (San Francisco): I am joined by Dr. Robertson Ward in this:

WHEREAS, The highest quality of medical care and rehabilitation of service-connected disabilities in veterans is an undisputed obligation of the Federal Government and a basic requirement of long-term defense; and

WHEREAS, This should be the first responsibility of the Veterans Administration medical program; and

WHEREAS, In most communities local health facilities are adequate for treatment and rehabilitation of non-service connected disabilities; and

WHEREAS, Economy is usually given as the excuse for the Veterans Administration not affording physicians in the home town program with the veterans' service medical records or records of treatment of the Veterans Administration or otherwise; and the lack of such records deters the best medical

care and rehabilitation of the veteran as well as working a hardship on the physician; and

WHEREAS, The present Veterans Administration laws state that non-service connected illnesses will be cared for by the Veterans Administration "if the individual signs an oath that he is unable to pay for private medical care"; and

WHEREAS, Such violations could be eliminated if a more accurate definition of eligible beneficiaries were defined in the law; and

WHEREAS, It is a very controversial question as to whether or not the Federal Government should continue to develop a system of socialized medicine for non-service-connected disabilities in veterans; therefore, be it

Resolved, That this House of Delegates instruct our Delegates to the American Medical Association to introduce and sponsor resolutions that will set up a program of study which will aid Congress to:

1. Continue the policy of the A.M.A. of advocating the best medical care and rehabilitation of service-connected disabilities.

2. Eliminate false economy measures in home town treatment programs and furnish the home town physician with military and Veterans Administration medical records.

3. Eliminate waste in the treatment of non-service connected disabilities, by defining a"beneficiary" sufficiently well so that the offenders could be apprehended in order to prevent the expansion of facilities for care of non-service connected disabilities.

4. Eliminate the use of Veterans' Administration hospitals as domiciliary establishments so prone to work against rehabilitation.

5. Exercise all further economy possible with the Veterans Administration to prevent the expansion of facilities for care of non-service-connected disabilities.

VICE-SPEAKER BAILEY: Is this an emergency measure?

DR. LEON PARKER: No.

DR. ROBERTSON WARD: May I move that this be an emergency measure, because this is to carry out exactly the same thing, as I see it, as Dr. Garland's, and if one is given consideration before this Reference Committee, the other ought to also be given consideration.

I move this be an emergency.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded that this be declared an emergency. Is there any discussion?

All those in favor signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Neither Dr. Charnock nor I are happy about this emergency business. Time was when a man could bring an emergency resolution before the House, and it required nothing more than it be submitted to the Reference Committee.

If you recognize it now, it is perfectly clear that some of these things have not been declared an emergency. They can be resubmitted and go to the Reference Committee after the proper time.

I call that to the attention of the few men who have brought these resolutions that have not been declared emergencies.

Dr. Albert G. Miller.

DR. ALBERT G. MILLER (San Mateo):

WHEREAS, Many issues and policies affecting us are being made by national law and international agreements; and

WHEREAS, The practice of medicine may be affected economically and in a broad scientific sense; and

WHEREAS, We are always vulnerable to attempts of collectivism through legislative channels; and

WHEREAS, Our medical societies have contained themselves too long and should now assume the offense on these matters; now, therefore, be it

Resolved, That our Delegates to the A.M.A. alert the A.M.A. House of Delegates to this particular problem, and specifically be it further

Resolved, That we and our Delegates to the A.M.A. heartily endorse and urge every member of Congress to adopt Senate Joint Resolution No. 1, the so-called Bricker Resolution.

Mr. Speaker, because of the impending legislation on this particular bill in the Senate, I would like to ask the members of this House to go along with my motion to make this an emergency, in spite of all the many issues you have before you. I would like to still make that request, and put that in the form of a motion, that it be an emergency.

VICE-SPEAKER BAILEY: Is there a second?

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Is there any discussion?

A MEMBER: A point of information. What is the Bricker Resolution?

VICE-SPEAKER BAILEY: What is the Bricker Resolution?

DR. ALBERT G. MILLER: I could tell you, but I would like to turn it over to somebody who knows a little more than I do. I would like permission to ask Dr. Alesen to speak on it.

VICE-SPEAKER BAILEY: Dr. Alesen, will you speak on that?

PRESIDENT L. A. ALESEN: Mr. Speaker, members of the House: I very strongly recommend that this be made an emergency resolution.

As you know, we have had the examples of Teheran, Potsdam, and Yalta, executive agreements made above and beyond the control of our Congress, which have become the law of the land.

The Sixth Article of the Constitution of the United States provides that anything adopted by treaty with a foreign power shall always take precedence over any domestic law.

Now, the Senate Joint Resolution No. 1 proposed by Senator Bricker merely results from the pro-

posals made by the House of Delegates of the American Bar Association, working in connection with men like Frank E. Holman and Dean Manion, who, by the way, is to speak to us on Tuesday evening.

The purpose of the Bricker Resolution is to amend Article VI of the Constitution that, first of all, any treaty made with a foreign power which in any manner interferes with our Constitution shall be invalid as to that specific provision. Secondly, that no treaty made with a foreign power shall in any manner interfere with our domestic law, except upon congressional legislation. And third, executive agreements shall be subjected to the same requirements as our treaties and congressional legislation.

Now, let's see a moment, Mr. Speaker, if I may elaborate a little bit. You recall some two or three years ago there was a determination made by our Appellate Court here in California on the case of Fuji versus California. This was an appeal by a Japanese who wanted to own land and was denied the right to own land because of our alien restrictions.

The Appellate Court held that because the United States was and is a signatory to the United Nations, and because of an action of the United Nations General Assembly opposing any racial restrictions in member nations with respect to the ownership of property, therefore, the rights of you and me as citizens of California to determine who shall and who shall not own land, had been abrogated.

Now, Mr. Speaker, I won't stand before you and discuss pro or con whether or not any individual or race should be restricted with respect to ownership of land. I, personally, think the Japanese people ought to own land, but nonetheless I contend that the determination upon that proposition should be made by you and me as citizens of the State of California, and not by some super-organization over which we have no control whatsoever.

There are several other instances which I think should be elaborated. Perhaps Mr. Hassard would like to do so. But here is the purpose, and I call your attention specifically to this: The International Labor Organization which was organized in 1920, and of which we in the United States have been members since 1935, did in June 1952 draw up some nine rather elaborate proposals for socialization among member nations, about three of which provided an elaborate code for socialized medicine.

Now, just what could happen? That so-called convention of the International Labor Organization was referred to and is at this time before the Finance Committee of the Senate of your land and mine. Only a majority of seven out of the thirteen votes would be required to move that resolution, that convention onto the floor of the Senate.

The law requires merely a two-thirds majority of those Senators present and voting, and only a handful of Senators could adopt the International Labor Organization convention which, in turn, would bring socialized medicine to every one of us in America without the subject ever having been discussed by the Congress of the United States.

Now, the Bricker Resolution following the proposals of the American Bar Association, merely proposes, as I said a while ago, to return to America the rights to make its own legislative determination.

Please, ladies and gentlemen of the House of Delegates, this is your land and mine. Let's do something about freedom. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Dr. Alesen. Dr. Alesen is in favor of the emergency resolution. (Laughter.)

Any further discussion on the point of whether this is an emergency or not? Hearing none, the Chair asks those in favor to say "aye."

... The motion was put to a vote and it was carried. ...

DR. HENRY GIBBONS III (San Francisco): On behalf of the Medical Services Commission, I will introduce this amendment to Chapter VII of the By-Laws of the C.M.A., adding a new Section 21, relating to the Medical Services Commission:

Resolved, That Section 21 is hereby added to Chapter VII of the By-Laws of this Association, to read as follows:

"Section 21—Medical Services Commission.

(a) The Medical Services Commission shall consist of nine members appointed by the President, with the approval of the Council, for three-year terms, with three members to be appointed each year.

(b) There shall be a chairman, vice-chairman, and secretary of the Commission, each of whom shall be appointed each year from amongst the membership of the Commission by the President of the Association, with the approval of the Council.

(c) There shall be an Executive Committee of the Commission, consisting of the officers. The Executive Committee shall meet at the call of the chairman, and shall perform such duties and exercise such powers as the Commission may direct.

(d) The Medical Services Commission may study all matters relating to the problems of organized medical services or hospital care, and shall from time to time submit recommendations thereon to the Council. In addition, it shall perform such other duties as the Council may delegate to it. It should provide a liaison with all public and private groups that are interested in the field of organized medical services, and should be available to the component societies and organizations affiliated with or related to this Association for consultation and advice. The Commission may, from time to time, appoint special study committees from amongst the membership of the Association to study specific assigned problems and to report findings and recommendations to the Commission.

(e) The Commission shall meet at the call of its chairman, and a majority of the members of the Commission shall constitute a quorum."

Be it further

Resolved, That the present Sections 21 and 22 of

said Chapter VII are renumbered 22 and 23, respectively.

VICE-SPEAKER BAILEY: That will be referred to Reference Committee No. 4, and will automatically be taken up on Wednesday.

All the previous ones have been referred to No. 3, but this is on the By-Laws.

Are there any further resolutions?

Dr. Rochex?

DR. FRANCIS ROCHEX: I wish to resubmit the resolution I read a few moments ago. I shall not reread it. Its purpose is to initiate action to improve the legal position of organized medicine.

VICE-SPEAKER BAILEY: Thank you, Dr. Rochex.

That, then, is accepted and referred to Reference Committee No. 3.

Dr. Craig, do you have something?

DR. LYLE G. CRAIG (Los Angeles): I believe under the regulations I can resubmit that resolution. Do you have a copy of it?

VICE-SPEAKER BAILEY: That is all right. We know what it is.

DR. LYLE G. CRAIG: It is the one about asking the American Medical Association to be more strict in the selection of advertising material from pharmaceutical firms.

VICE-SPEAKER BAILEY: It is resubmitted.

Are there any further resubmitted resolutions?

Dr. Hoffman would like to do the same. Unless anyone wants to object to it, we will have Dr. Hoffman's resubmitted and referred to Committee No. 3.

Now, Dr. Charnock.

SPEAKER CHARNOCK: Is there any more new business to come before this session? If not, we have a couple of announcements to make.

. . . Announcements. . . .

SPEAKER CHARNOCK: Our Legal Counsel, Hap Hassard, has something to say on the Interim Session.

MR. HOWARD HASSARD: There are two By-Law amendments that were introduced today that, if either one is adopted, will affect the future holding of an Interim Session.

There are possibilities of confusion on Wednesday unless all of the resolutions introduced today, whether designated as emergency or not, are heard by the Reference Committees to which each has been referred, so that each Reference Committee is prepared to report on everything referred to it, depending on what this House decides to do.

Therefore, may I suggest that each Reference Committee consider all resolutions that have been referred to it, and that each member of the House who is interested in any resolution appear before the appropriate Reference Committee Wednesday, and then, depending on what you do on Wednesday, you may or may not be called upon to consider the few resolutions that weren't of an emergency nature.

SPEAKER CHARNOCK: It has been recommended that we have a show of hands by those who do or do not want an Interim Session. Let's make it easy and say that those who do not want an Interim Session, put up their hands.

. . . A show of hands. . . .

SPEAKER CHARNOCK: Now, those who would like to have an Interim Session.

. . . A show of hands. . . .

DR. LESLIE MAGOON (Santa Clara County): Mr. Speaker, I should like to differ with Mr. Hassard's opinion in one respect.

I should like to differ with Legal Counsel. As I heard each amendment, each one specified that under the circumstances this Interim Session cannot be eliminated by the adoption of either version.

SPEAKER CHARNOCK: Would Legal Counsel like to carry on this debate?

MR. HOWARD HASSARD: One of the proposals that was introduced by Dr. Kirchner is exactly as Dr. Magoon just stated. It calls for the continuance of the Interim Session, unless in a given year it is decided not to hold it. The other By-Law amendment introduced by Dr. Hinman of San Francisco, is in the reverse. It calls for the elimination of the Interim Session unless it is decided to hold it. It also calls for that decision to be made as the first order of business by the House of Delegates at the regular session.

Well, if you adopt that one on Wednesday, it will be too late to make the decision for this coming December, and I am trying to avoid an argument on Wednesday, merely by asking the Reference Committees and the members of the House of Delegates to be prepared on everything that has been introduced.

Those that are not an emergency, you may not be called upon to consider on Wednesday, but, at least, like Boy Scouts, you can "be prepared." (Laughter.)

SPEAKER CHARNOCK: It is nice to have somebody do your arguing for you.

If there is no further business to come before this body, we will recess until 9:30 a.m. on Wednesday, May 27, in this room.

. . . The Session adjourned at 4:30 p.m. . . .

Wednesday Morning Session

The Wednesday morning session of the California Medical Association, House of Delegates, was called to order in the Renaissance Room at 9:30 a.m. by Speaker Donald A. Charnock, who presided.

SPEAKER CHARNOCK: Our General Session meeting will please be in order, and we will have the report from Dr. Hoffman, chairman of the Credentials Committee.

DR. HOFFMAN: Mr. Speaker, there is a quorum present. As chairman of your committee, I move that the visual roll call be accepted in lieu of the usual roll call.

SPEAKER CHARNOCK: Is there a second to that motion?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded the visual roll call be accepted instead of the oral roll call. Is there any discussion?

. . . The question was called for, the motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: The House is in session.

DR. HOFFMAN: Mr. Speaker, may I make an announcement?

. . . Announcements. . . .

SPEAKER CHARNOCK: This little book of ballots, we hope, will save a little time, and every delegate who is entitled to vote, is entitled to a book of ballots. If you do not have it, ask Dr. Hoffman.

. . . Announcements. . . .

SPEAKER CHARNOCK: The next order of business is an announcement by the Secretary, Dr. Daniels.

SECRETARY ALBERT C. DANIELS: This morning, the Council considered where to hold the next Annual Session, and a motion duly made, seconded and carried, was that we hold our 1954 Session at the Biltmore Hotel in Los Angeles, and that the 1955 Annual Session is to be held in San Francisco.

ELECTION OF OFFICERS

SPEAKER CHARNOCK: The next order of business is the election of officers. The first office is that of President-Elect. The Chair will accept nominations for the office of President-Elect.

DR. SAM J. MCCLENDON (San Diego): Mr. Speaker, Mr. President-Elect, officers of the California Medical Association, fellow delegates: This morning, it is a rare privilege for me to appear before you to place in nomination one of your members.

The member I would like to place in nomination was born in Nebraska of good, hearty American heritage. He was educated in the public schools of Nebraska. He graduated in medicine from Creighton University.

He came to California twenty-nine years ago. He has been practicing in San Bernardino County ever since. He has occupied every position of honor and trust in his county medical society, including one term as president of that organization.

He has served as a delegate to this body for twelve years. He was a member of our Council of the C.M.A. for two terms. He is an honorable practitioner of medicine. He has had the interest of the California Medical Association at heart all of his life. He is honest, and his integrity is unquestioned, and I know that he deserves the honor and will serve in this capacity as those who have gone before him have served honorably and well.

I would like to place in nomination the name of Dr. Walter Cherry of San Bernardino. (Applause.)

SPEAKER CHARNOCK: Dr. Cherry's name has been placed in nomination.

DR. SAMUEL R. SHERMAN (San Francisco): Mr. Speaker, members of the House of Delegates: It is an even rarer privilege for me to be before you today to follow the illustrious Sam McClendon to second the nomination of Walter Cherry for President-Elect of the California Medical Society.

I have met Dr. Cherry for the first time this year, and like a great many delegates in my San Francisco Medical Society, I have been most markedly impressed by his sincerity and with his qualifications for this job.

I feel that it is an honor to second the nomination of a man who, in my estimation, is a fine physician, an excellent American citizen, a wonderful father, and who will make an outstanding representative for all of us in the California Medical Association.

Thank you. (Applause.)

SPEAKER CHARNOCK: Dr. Ruddock, of Los Angeles County.

DR. JOHN C. RUDDOCK (Los Angeles County): Mr. Speaker, members of the House: The highest honor you can give a man of this association is to be its president. It is an honor we should give a man for years of practice; an honor we should give a man of years of service to organized medicine.

Such a man is the candidate Dr. Walter Cherry. I believe he is over fifty years of age. I think we need the counsel of a man with a few gray hairs in his head. I think this is a precedent that has been followed by many organizations for many years.

So, at this time, I would like to place before you my friend of many years, Dr. Walter Cherry. (Applause.)

DR. R. STANLEY KNEESHAW (Santa Clara County): Mr. Speaker and members of the House of Delegates: I, too, want to second the nomination of Walter Cherry. I have known him for many years. I know how intelligent and friendly he is, and how well he would represent this society should we elect him as President.

I have had the honor of being one of the Presidents of this Association, and I know how much there is in being elected to that office. I certainly did appreciate the honor that I had, and I am sure that it is an honor for anybody to have it, and I know that he will fill that position well should he be elected.

I would like to second the nomination. (Applause.)

DR. R. VARIAN SLOAN (Los Angeles): I, too, would like to second the nomination of Walter Cherry as President-Elect of the California Medical Association.

I have known Dr. Cherry ever since I was an intern. In fact, he was my senior staff man out at San Bernardino when I was an intern in that county hospital. No one on the staff was more highly honored than Walter Cherry, and I feel it a privilege and an honor to be able to second his nomination. (Applause.)

DR. ROGER A. VARGAS (San Bernardino County): Mr. Speaker, members of the House: It is with a

great deal of pride that I come before you on this occasion as representative of the San Bernardino County Medical Society of which Dr. Walter Cherry has been a member for the past twenty-nine years.

It has been my pleasure and privilege to become closely acquainted with Dr. Cherry.

He has been most active in all of the affairs of our own society, and because of this was honored by being elected president of the society.

He has been most active in civic affairs, and because of this fact realized it was necessary for him to participate fully in the affairs of the California Medical Association.

As a result of his activities within his own society and within his own city, he was named to the Council of the California Medical Association in 1945. He was active as a member of the Council for several years, relinquishing the position only to allow an urgent replacement.

He continued to take an active part in all of the affairs connected with his community and with medical practice.

He gave counsel to his successors whenever problems of the county medical society had to be solved.

Because of his background as a general practitioner in a small community, he has been aware of the trends and thoughts of the people. He has been able to discuss openly and frankly any and all problems concerned with medical practice, and as a result has been able to grasp the meaning of medical services to the patient at the grass roots level.

With this experience and background, it is quite evident he has developed the philosophy of service to the people which stands at the very source of medical practice. He is in a position to continue to lead the members of the California Medical Association in an era of service to the patient, of understanding of the problems confronting medicine today.

Here is a man who has devoted many years of service to his community, to his patients, to fellow practitioners, to the county medical society, and to the state society.

Here is a man who by training has become a logical leader of his state society. Here is a man able and willing to devote all of the time necessary to the problems confronting medicine in the State of California.

Therefore, Mr. Speaker and members of the House of Delegates, I have the honor to second the nomination for President-Elect of the California Medical Association of Dr. Walter Cherry. (Applause.)

DR. J. J. CRANE (Los Angeles County): I wish also to second the nomination of Walter Cherry for President-Elect and I feel that we should choose the man, all things being equal, who has been the longest in the service of our organization.

Now, if we will stay by that right straight through, we will make no mistakes in this organization, and I believe if you will look back on history, you will find that that has been our policy, and it should continue to be our policy. (Applause).

SPEAKER CHARNOCK: Are there any more seconds?

Are there any more nominations for the office of President-Elect?

Dr. Moore.

DR. J. W. MOORE (Ventura County): Mr. Speaker, members of the House of Delegates: I feel privileged and greatly honored to be able to place before you in nomination for the office of President-Elect of the California Medical Association the name of a man from the County of Ventura. The last and only time in the past that the Ventura County Society had this honor was in 1897 when Dr. Cephas L. Bard was nominated and elected to the office of President of the California Medical Society.

As evidence of the fact that times have changed since then, the total membership of the Association at that time was some three hundred. We are now more than eleven thousand.

The problems facing our profession have multiplied in proportion. Likewise, the demands upon our executive officers in time, energy, and effort have similarly multiplied.

Organized medicine is in a difficult phase of its existence. The California Medical Association has, for many years, been a leader in organized medicine, and it remains vigorous and active. It is essential to each and every one of us that it continue so.

We require as an executive, a man who can provide us with diligent, vigorous, active and aggressive leadership.

I have the honor to present such a man in nomination for this office, and I would like to tell you of some of his qualifications for it.

Dr. A. A. Morrison is forty-eight years of age. He was first elected as a delegate to this House in 1934; nineteen years ago.

He served continuously in it until 1951, except for the time he was occupied serving our country in the last war.

He was also secretary of the Ventura County Medical Society from 1934 to 1951, except for his war years.

During this time he served actively in the House of Delegates, and was a member of many committees.

In 1951 Dr. Morrison was elected to the Council of the C.M.A. and has served there to the present time.

He was appointed to the Board of Trustees of C.P.S. one year ago, and is now a member of that Board.

He has also been a member of the Council of the California Public Health League for the past six years. He has never been absent from a meeting of the C.P.S. Board or the C.M.A. Council since assuming his duties.

His association in our affairs has been long and continuous, and he has never been found wanting in any duty given him.

Dr. Morrison served in the United States Navy from January 1941 to October 1945. He reverted to

inactive duty with the rank of captain. He has been active in civic affairs of every variety from membership on school trustee boards to membership in the Red Cross.

He has been a member of the board of directors of Tri-Counties Blood Bank for the past several years and he was active in initiating and establishing that blood bank.

I could enumerate many other of his activities and accomplishments, but this is enough, I am sure, to reveal to you what type of a man he is.

He has proven his ability, his energy, his faithfulness, and his integrity over and over again. His experience in our Association affairs has been continuous and long. His qualifications for the office of President-Elect are unquestioned. He has the youth, the experience, the energy, to provide us with great leadership.

It is my pleasure and honor to place in nomination for President-Elect of the California Medical Association the name of Dr. A. A. Morrison. (Applause.)

SPEAKER CHARNOCK: Dr. A. A. Morrison has been placed in nomination for President-Elect.

Francis Hodges, of San Francisco County.

DR. FRANCIS HODGES (San Francisco County): Mr. Speaker and delegates: It has been my good fortune during the last year to assess the worth of Dr. A. A. Morrison. He brought to the Board of Trustees of C.P.S. his wisdom, experience, and gift of analysis. I am certain that he received a good part of his quota of gray hairs on that Board; and he has the gray hairs, I can assure you.

We trustees sought and valued his opinions, as I am sure C.M.A. will continue to seek and value his opinions.

It is, therefore, my happy office to second the nomination of Dr. A. A. Morrison. (Applause.)

SPEAKER CHARNOCK: Dr. David Dozier of Sacramento County.

DR. DAVID DOZIER: (Sacramento County): It is my great pleasure to second the nomination of Dr. Morrison for President-Elect.

You know, there is an old rule that says a man's true stature is in the reverse proportion to the personal pronouns straight up. The bigger the "I," the more a man speaks of his own accomplishments, often the less the true ability of the man.

Certainly, I would say in relation to Dr. Morrison, he is quiet and soft-spoken. Those who have worked about him say he has very little to say, but he is a great doer.

I believe that if we think of that simple rule, here is a man who has really done some grass roots public relations and service for our medical society.

Those who have worked close to him, those who have been about him, can ardently testify to the very fine character of the work he has done.

I think he is a man eminently qualified for the position, and it is my pleasure to second the nomination. (Applause.)

DR. H. GORDON MACLEAN: Mr. Speaker, members of the House of Delegates: I take great pleasure in seconding the nomination of Dr. Morrison. I have had the opportunity as a member of the Council and later as President-Elect and President, of observing Dr. Morrison's work. On the Council he is not a noisy man. He is a quiet thinker, but he expresses himself very well indeed, and he has given every indication of great strength.

I also had the pleasure of going around with him on some of our tours when we were visiting county medical associations. I assure you Dr. Morrison carried out his part of these tours very well indeed, and I believe he has done a great deal in unifying the counties for which he has been their Councilor.

I, therefore, wish to recommend to you Dr. Morrison, and I am sure, should you elect him to this position, you will find the office taken care of by very strong, capable hands. (Applause.)

SPEAKER CHARNOCK: Are there any other nominations for President-Elect?

The Chair, hearing none, declares the nominations closed. They are closed.

We will appoint as tellers Philip Baxter of Alameda, Verne Ghormley of Fresno, Wells C. Cook of Los Angeles, Allan Hinman of San Francisco, Leon Fox of Santa Clara, and J. B. Price of Orange.

If these gentlemen will collect the ballots and bring them up and count them, please. This will be Ballot No. 1.

I think it would be very nice if we asked the two gentlemen who are running for this office to stand.

Dr. Walter Cherry, stand, please. (Applause.)

Dr. A. A. Morrison, will you stand. (Applause.)

We are balloting on Ballot No. 1.

VICE-SPEAKER BAILEY: If there are no objections, we shall continue with the program while the tellers are collecting the votes. I hear no objections.

The next office is that of Speaker.

Are there any nominations for Speaker of this Association?

DR. EWING L. TURNER (Los Angeles): Mr. Chairman, members of the House: It is really a great honor and a great privilege for me to place in nomination today the name of one of my good friends, the name of a man who is a good friend of all State Medical Association activities, a man whom all of you know and know very well because of the excellent work he has done in the House of Delegates for the past two years.

Don Charnock, as you know, was graduated from Harvard Medical School in 1925, came to Los Angeles and has been actively engaged in practice here since that time.

He has always been extremely generous with his time to Association activities, and I think it is unnecessary for me to tell you gentlemen in the House how well he has performed for the past two terms as Speaker of the House.

I am sure that all of you have noticed a streamlining, modernizing of procedures in making this House run smoothly.

The visual roll call, for example, has eliminated

about an hour and a half of routine here at the opening of each of these House of Delegates meetings.

So, because this is a man who has the interest of all of us at heart, because he is a man who really loves medicine, it is with a great honor that I place in nomination for Speaker of the House to succeed himself, Dr. Don Charnock. (Applause.)

VICE-SPEAKER BAILEY: Dr. Charnock has been nominated. Are there further nominations? Are there any further nominations?

The Chair hears none.

A MEMBER: I move they be closed.

VICE-SPEAKER BAILEY: The Chair declares the nominations closed. How will you vote?

. . . There were calls of "acclamation." . . .

VICE-SPEAKER BAILEY: All those in favor of electing Dr. Charnock will say "aye."

. . . The motion was put to a vote and it was unanimously carried. . . .

(Applause.)

SPEAKER CHARNOCK: Thank you very much, ladies and gentlemen.

The next order of business is the election of a Vice-Speaker.

DR. EUGENE HOFFMAN (Los Angeles County): Mr. Speaker and members of the House of Delegates: It is my privilege to place in nomination for Vice-Speaker, Dr. Wilbur Bailey. You have seen how he has conducted himself, and you have seen what a fine team he makes with our again newly-elected Speaker.

Thank you, ladies and gentlemen.

SPEAKER CHARNOCK: Are there any other nominations for the office of Vice-Speaker?

The Chair hearing none declares the nominations closed. They are closed, and Dr. Bailey is elected. (Applause.)

For the record, we should say, "Those who are in favor of Dr. Bailey's election signify by saying 'aye.' "

. . . The motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: He is unanimously elected.

I don't want to streamline this too much. (Laughter.)

The next order of business is the election of District Councilors.

I will remind you that the District Councilors are nominated by the delegates from their districts.

Their districts should have reported them to the Chair before now, but they have not.

We will call on the Second District for its nomination.

DR. FRANKLIN B. MEAD (Riverside County): Mr. Speaker and members of the House: The Second District has met in caucus. We wish to place in nomination to succeed himself Dr. Omer W. Wheeler.

SPEAKER CHARNOCK: The name of Dr. Omer W. Wheeler has been placed in nomination by the delegates from the Second District. Is there any challenge from the House? The Chair hearing none, declares Dr. Wheeler elected. (Applause.)

The Eighth District, San Francisco.

DR. ALLEN T. HINMAN (San Francisco): According to Chapter VIII, Section 6 of the By-Laws of the California Medical Association, the delegates from San Francisco, the Eighth District, have elected by unanimous vote, on May 24, Dr. Sidney Shipman as Councilor for this district. (Applause.)

SPEAKER CHARNOCK: The name of Dr. Sidney J. Shipman has been placed in nomination by the Eighth District. Do we hear any challenge from the House? Hearing none, the Chair declares Dr. Sidney Shipman elected from the Eighth District. (Applause.)

The Eleventh District. Dr. Dave Dozier.

DR. DAVE DOZIER (Sacramento County): The Sacramento Society for Medical Improvement, sir (laughter), the Eleventh District, takes great pleasure in nominating Dr. Ralph Teall from the Eleventh District. (Applause.)

SPEAKER CHARNOCK: Dr. Ralph Teall has been nominated by the Delegates from the Eleventh District.

Is there any challenge from the floor? The Chair hearing none, declares Dr. Ralph Teall elected. (Applause.)

We will now have nominations for Councilors-at-Large.

Two offices are open, Sidney J. Shipman, San Francisco, term expiring, and Arthur A. Kirchner, Los Angeles, term expiring.

These nominations come from the floor.

DR. SIDNEY J. SHIPMAN: Mr. Speaker, may I be heard?

SPEAKER CHARNOCK: Dr. Sidney Shipman, Councilor from the Eighth District.

DR. SIDNEY J. SHIPMAN: Members of the House: It has been interesting to me to watch from time to time the rising influence of certain societies, and I think Alameda-Contra Costa is due recognition at the present time.

You realize that Alameda-Contra Costa County is now known for its recent accomplishments, not only in the State of California, but throughout the nation.

That means to me that this county has excellent leadership.

One of those leaders has been Dr. Eric Reynolds as most of you in this House know. He is a graduate of the University of California Medical School. I trust you won't hold that against him. (Laughter.)

He is a general practitioner. He is a member of the American College of Surgeons. He was president of the Alameda County Medical Society in 1950, a member of the Board of Trustees of C.P.S. for four years; one of the organizers of Northern Blue Cross, a member of the House of Delegates for many years,

and the president of the medical staff of Alta Bates Hospital.

Incidentally, he was in the United States Navy for four years.

It is an honor and privilege for me to place in nomination the name of T. Eric Reynolds of Oakland. (Applause.)

SPEAKER CHARNOCK: The name of Dr. T. Eric Reynolds has been placed in nomination for Councilor-at-Large, for the northern group.

Are there any other nominations for this office?

A MEMBER: I move the nominations be closed.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that nominations for this office be closed.

How will you vote?

. . . There were calls of "by acclamation." . . .

SPEAKER CHARNOCK: Those who are in favor of Dr. T. Eric Reynolds for Councilor-at-Large will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: He is elected. (Applause.)

Now for the office of Dr. Kirchner, term expiring.

DR. J. PHILIP SAMPSON: Mr. Chairman, members of the House of Delegates: It is my privilege to nominate Arthur to succeed himself.

Art has been a member of this group for a year. He has been on one committee, has done a tremendous amount of work. He is a hard-working man. I am sure all the men who have worked with him know him as an honest and capable man.

In one year you can barely get your teeth in the job. We need a man for many years on the Council.

It is my privilege to again nominate Arthur Kirchner to succeed himself. (Applause.)

SPEAKER CHARNOCK: Art Kirchner has been nominated to succeed himself. Are there any other nominations?

The Chair, hearing none, declares the nominations closed. They are closed.

How will you vote?

. . . There were calls of "by acclamation." . . .

SPEAKER CHARNOCK: Those who are in favor of Arthur Kirchner of Los Angeles County will please signify by saying "aye."

. . . The motion was put to a vote and it was unanimously carried. . . .

SPEAKER CHARNOCK: Dr. Arthur Kirchner is declared elected. (Applause.)

VICE-SPEAKER BAILEY: We have the election results here.

SPEAKER CHARNOCK: The Secretary will read the announcement of the election for President-Elect.

SECRETARY DANIELS: Dr. Morrison received 138 votes, and Dr. Cherry 92.

Dr. Morrison is elected. (Applause.)

SPEAKER CHARNOCK: Dr. Morrison has been elected. (Applause.)

Dr. MacLean, Dr. Kneeshaw, Dr. Peers, will you bring our new President-Elect to the rostrum? (Standing applause.)

We are very happy to have Dr. Peers, Past President, with us this morning for this little task. (Applause.)

Now we will go to the Fifth District. Nominations are now in order for Councilor from the Fifth District.

Dr. Moore of Ventura.

DR. J. W. MOORE (Ventura County): Mr. Speaker, members of the House of Delegates: The Delegates from the Fifth District, Ventura, Santa Barbara and San Luis Obispo, met in caucus and elected to place before you the name of Dr. Robert O. Pearman from San Luis Obispo as Councilor from the Fifth District.

SPEAKER CHARNOCK: The name of Dr. Robert O. Pearman has been placed in nomination by the Delegates from the Fifth District.

Is there any challenge to the name of Dr. Robert O. Pearman?

The Chair hearing none, declares him elected Councilor from the Fifth District. (Applause.)

VICE-SPEAKER BAILEY: The next order of business is the election of Delegates to the American Medical Association; Robertson Ward, San Francisco, term expiring.

Are there any nominations to this office?

DR. DONALD M. CAMPBELL (San Francisco): Mr. Speaker, fellow delegates: Someone said some time ago to listen not to him that flattered with lips. So, I hope the remarks I make subsequently will not be considered as such.

The individual that I wish to nominate today comes from a Scotch-Irish, English ancestry, and I must admit that he doesn't talk too freely about his English ancestry, but he stresses more the Irish and the Scotch lineage.

Of course, his wit and acuteness in politics apparently come from his Irish ancestry. But, of course, his general broad judgment, I am convinced, comes from a race that my ancestors formerly belonged to. (Laughter.)

The greatest fight for freedom that this world has ever seen, and possibly the first time that freedom was ever released was fought almost 639 years ago at the Battle of Bannockburn, when Robert Bruce, after learning all his tactics of war from Edward the Second, was suspected as not being loyal to him and slipped away one night by moonlight and arrived over the Scotch border. You know the result. In 1314, on June 24, the English army numbering but 100,000 men was completely defeated by Robert Bruce.

But, before the battle started he was seated on a small, light, fast-moving horse without armor, and Henry Bowen was the advance guard of the English. He saw his chance to eliminate the fight, and immediately dashed forth with his heavy armor, but the old Scot saw his chance and ended for all time Sir Henry's career.

However, in so doing he broke his famous battle axe's handle.

I don't know whether you people have ever used an axe like I have. You are possibly using it now in a different method, but if you use an axe for a certain time, the handle is so warped that it fits the individual.

In my former days in a contest in the far North, when I was on a river driving job, in order to win the contest, if you were right-handed, they would hand you a left-handed axe, and if you were left-handed they would give you a right-handed axe. With such an axe, you find out you miss by two or three inches.

Robert Bruce bemoaned all afternoon that he had ruined such an axe on so unworthy a head.

Now, you all know this man. His ancestor fought at the Battle of Bannockburn and before the horrible English charge.

Before that initial impact, the sub-commander of the Black Douglas yelled at the top of his voice, "Stand fast."

I don't wish to mention his name because I will mention it later. (Laughter.)

Now, this individual from San Francisco is a personal friend of mine. He has been through practically every office in the society. He uses balance, he uses judgment.

I have had my personal difficulties with him, and anyone who has sat on the Board of Directors of this society up there realizes you have to give and take.

Throughout his career he has given a great deal of his time to medicine, while some of us sat back and loitered. He has represented us in the society from all angles.

He has represented us for four, almost five years as a Delegate to the American Medical Association.

I wish to place in nomination my good friend Robertson Ward. (Laughter.)

VICE-SPEAKER BAILEY: Any other nominations besides Robert Bruce here — I mean Robertson Ward?

Are there any further nominations for this office?

The Chair hearing none, declares the nominations closed.

How will you vote?

. . . There were calls of "by acclamation." . . .

VICE-SPEAKER BAILEY: Those who are in favor of electing Dr. Robertson Ward will say "aye."

. . . The motion was put to a vote and it was unanimously carried. . . .

VICE-SPEAKER BAILEY: Dr. Robertson Ward is declared elected.

DR. ROBERTSON WARD: Thank you, gentlemen. (Applause.)

VICE-SPEAKER BAILEY: The next office is that of Dr. Sam J. McClendon, San Diego, term expiring.

DR. JOHN M. RUMSEY (San Diego County): You know, the Scotch seem to be very popular here this morning. Maybe it is what we have been drinking the last three days.

The man I wish to place in nomination to succeed himself is one of the hardest workers that the Medical Association of California and of America has ever had. Sam has worked long and hard. He has done a good job. He has always produced. All of the reports from the American Medical Association are glorious in his deeds.

I would like to nominate Sam McClendon to succeed himself. (Applause.)

VICE-SPEAKER BAILEY: Dr. Sam J. McClendon has been nominated to succeed himself. Are there further nominations? Hearing none, the Chair declares the nominations closed.

Will you vote by acclamation?

Those in favor say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. McClendon is declared elected. (Applause.)

Next is Dr. Eugene F. Hoffman, Los Angeles, term expiring.

Dr. Wadsworth, from Los Angeles.

DR. E. E. WADSWORTH (Los Angeles): Mr. Speaker: As has been the policy of this House for many years, and reasonably so, to return men who have done a good job to our delegations, I would like to nominate Eugene Hoffman to suceed himself. (Applause.)

VICE-SPEAKER BAILEY: Are there further nominations? Are there any other nominations?

The Chair hearing none, declares the nominations closed.

Voting by acclamation, all those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. Hoffman is elected.

Next is Dr. John W. Green, Vallejo, term expiring.

DR. L. H. FRASER (Alameda-Contra Costa County): The man I wish to nominate is getting a little old, but he is young enough to serve as your President next year. He served seventeen years as a delegate. It is my honor to present the name of Dr. John Green. (Applause.)

VICE-SPEAKER BAILEY: Dr. John Green.

Are there further nominations for this office?

Nominations are closed.

Those in favor of Dr. Green will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Dr. Green is elected.

Dr. Lewis A. Alesen, Los Angeles, term expiring.

Dr. Quinn.

DR. WILLIAM F. QUINN (Los Angeles): As an Irishman, I would like to nominate a Norwegian. (Laughter.)

I might say this about Lewie. Anyone smart enough to talk me into two-to-one odds on the Civic Auditorium, and I owe him two bottles of Scotch

this morning, is smart enough to take care of our interests.

I, therefore, nominate Lewie Alesen to succeed himself. (Laughter and applause.)

VICE-SPEAKER BAILEY: Dr. Alesen has been nominated.

Are there any further nominations?

The Chair declares the nominations closed.

Those in favor of electing Dr. Alesen will say "aye."

... The motion was put to a vote and it was unanimously carried....

VICE-SPEAKER BAILEY: Dr. Alesen is elected.

Frank A. MacDonald, Sacramento, term expiring.

DR. DAN KILROY (Sacramento): As the oldest Society in California, we have never apologized to the House of Delegates. I wish to apologize at this time, because we, too, are offering to you a Scotchman. (Laughter.)

I am asking you if you will overlook that fact and consider only the past services that Frank MacDonald of the Clan MacDonald, has done in the Legislature as a member of this House for many years, on the Board of C.P.S., on the Council of C.M.A., the long years of service Frank has given as an alternate delegate to the A.M.A., and his present service as a delegate to the A.M.A. I place in nomination to succeed himself Frank MacDonald. (Applause.)

VICE-SPEAKER BAILEY: Are there any further nominations for this office?

Hearing none, the Chair declares the nominations closed.

Those in favor of electing Dr. MacDonald will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. MacDonald is elected.

We go now to the Alternates of the American Medical Association.

Dr. Henry Gibbons III, of San Francisco, Alternate to Dr. Robertson Ward.

DR. FRANCIS ROCHEX (San Francisco): Mr. Speaker, members of the House: One of the fundamental requirements for the successful operation of a democratic organization is to have a long-term plan of sustained thought and action. This may best be accomplished by giving to potential office holders the opportunity to become acquainted with the responsibilities of their office before actually taking office.

The candidate whose name I wish to present to you has already served for one term. This candidate comes from a long line of medical men. These men have distinguished themselves in the service of organized medicine, first as pioneers in the San Francisco Medical Society, and also in the service of the California Medical Association.

This candidate has long shown himself to be an individual with a high sense of civic responsibility, a very hard worker who has served actively on many committees in the San Francisco Medical Society, and also in the California Medical Association.

He has been a member of the Board of Directors of the San Francisco Medical Society, has been a Delegate to this House for many years, is a member of the Board of Medical Examiners of the State of California.

I wish to place in nomination the name of Henry Gibbons to succeed himself.

VICE-SPEAKER BAILEY: Dr. Henry Gibbons has been nominated. (Applause.)

Are there any further nominations?

The Chair declares the nominations closed.

Those in favor of electing Dr. Gibbons will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Gibbons is declared elected.

Dr. A. E. Moore, San Diego, Alternate to Sam J. McClendon.

DR. DOUGLASS H. BATTEN (San Diego): Mr. Speaker, members of the House of Delegates: It is my pleasure to present to you the name of Dr. A. E. Moore, incumbent, to succeed himself as alternate to Dr. Sam J. McClendon.

VICE-SPEAKER BAILEY: Dr. A. E. Moore to succeed himself.

Are there any further nominations?

The Chair hearing none, declares the nominations closed.

Those in favor of electing Dr. Moore say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Moore is elected. (Applause.)

Next incumbent is Dr. Frederic S. Ewens, Manhattan Beach, alternate to Eugene F. Hoffman.

DR. EWING L. TURNER (Los Angeles): Mr. Speaker, members of the House: It is my privilege as secretary of the Los Angeles County Association to place in nomination the name of a man who has long represented general practice in this area.

This doctor has been a delegate for two years to the Academy of General Practice and has been an important member of their hospital commission.

He has been for the past year a very active member of the Council of our Los Angeles County Medical Association, and his decisions are always just, and always honest, and upright.

It is a great pleasure for me to place in nomination the name of Dr. Frederic Ewens to succeed himself as alternate to Dr. Eugene Hoffman. (Applause.)

VICE-SPEAKER BAILEY: Dr. Frederic Ewens has been nominated.

Are there further nominations for this office?

The Chair hearing none, declares the nominations closed.

Those in favor of electing Dr. Ewens will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Ewens is elected.

Dr. Orris R. Myers, Eureka, alternate to John W. Green.

DR. LEON O. DESIMONE (Los Angeles): I may be out of order here in that I am from Los Angeles and Dr. Myers from Eureka.

However, I have known Dr. Myers for many years, and I wish to name him to succeed himself for this office.

Thank you.

VICE-SPEAKER BAILEY: Dr. Myers has been nominated to succeed himself.

Are there any further nominations for this office?

Hearing none, the nominations are closed.

Those in favor of electing Dr. Myers will signify by saying "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Myers is elected.

The next office is that of J. B. Price, of Santa Ana, alternate to L. A. Alesen.

DR. L. E. WILSON (Orange County): Mr. Speaker, members of the House: Dr. J. B. Price was elected a year ago to fill the unexpired term of the late Dr. John Ball.

I know personally during this past year he has been attending all the American Medical Association conventions, and the special convention in Washington.

At this time I would like to nominate him to succeed himself in that position as alternate to Dr. Lewis Alesen.

VICE-SPEAKER BAILEY: Dr. J. B. Price has been nominated.

Are there any further nominations?

Hearing none, the Chair declares the nominations closed.

Those in favor of electing Dr. J. B. Price will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. J. B. Price is elected. (Applause.)

The last alternate, Dr. Henry A. Randel, from Fresno, alternate to Frank A. MacDonald.

Dr. Young.

DR. J. E. YOUNG (Fresno County): I do not know the background of Dr. Randel, but after seeing him night before last I was of the opinion he had some Scotch in him. (Laughter.)

We recognize Dr. Randel as a fine friend, a good doctor, and a person very conscious of the problems of organized medicine in relation to the public and private practitioner.

With that in mind, Mr. Chairman, I take great pleasure in nominating Dr. Henry Randel of Fresno as alternate to the American Medical Association. (Applause.)

VICE-SPEAKER BAILEY: Dr. Randel, of Fresno, has been nominated to succeed himself.

Are there further nominations?

Hearing none, the Chair declares the nominations closed.

Those in favor of electing Dr. Randel will say "aye."

... The motion was put to a vote and it was carried....

VICE-SPEAKER BAILEY: Dr. Randel, Scotch or Irish, is elected. (Applause.)

SPEAKER CHARNOCK: The next order of business is the election of C.P.S. Trustees.

C.P.S. Trustees, according to the By-Laws of C.P.S., are nominated by the Council, and are elected one at a time.

We will ask Dr. Daniels to give the Council nominations.

SECRETARY DANIELS: The Council nomination to fill the office formerly held by Donald Cass is Dr. Leon Desimone, of Los Angeles.

SPEAKER CHARNOCK: Dr. Leon Desimone, of Los Angeles, has been nominated for C.P.S. Trustee for this office.

Is there any other nomination?

The Chair hearing none, declares the nominations closed.

Will you vote by acclamation?

... There were calls of "yes." ...

SPEAKER CHARNOCK: Those in favor of Dr. Desimone will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: He is elected. (Applause.)

Dr. Daniels, will you give the nomination from the Council for the office held by Dr. Kendrick A. Smith, who cannot succeed himself?

SECRETARY DANIELS: The Council nominated Dr. Merlin Newkirk of Los Angeles.

SPEAKER CHARNOCK: Dr. Merlin Newkirk has been nominated for this office.

Are there any further nominations?

The Chair hearing none, declares the nominations closed.

Those in favor of Dr. Newkirk will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: He is declared elected. (Applause.)

Now, Dr. Daniels will give us the nomination for the next office.

SECRETARY DANIELS: The Council nominated Dr. Francis Hodges to succeed himself.

SPEAKER CHARNOCK: Dr. Francis T. Hodges has been nominated by the Council to succeed himself as Trustee. Are there any other nominations?

The Chair hearing none, declares the nominations closed.

Those in favor of Dr. Hodges will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: Dr. Hodges is elected. (Applause.)

The next nomination, Dr. Daniels.

SECRETARY DANIELS: The Council nominated Mr. Robert A. Hornby to succeed himself.

SPEAKER CHARNOCK: The Council has nominated Mr. Robert A. Hornby to succeed himself.

Are there any nominations from the floor?

The Chair hearing none, declares the nominations for this office closed.

Those in favor of Mr. Hornby will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: Mr. Robert A. Hornby is elected to the Board of Trustees. (Applause.)

This is the last office in this group to which there is a vacancy.

Dr. Daniels!

SECRETARY DANIELS: The Council nominated Dr. Ed Bruck, of San Francisco, to fill this vacancy.

SPEAKER CHARNOCK: Dr. Edward Bruck has been nominated for this office.

Are there any other nominations?

The Chair hearing none, declares the nominations closed.

Those in favor of Dr. Bruck will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: Dr. Bruck is elected. (Applause.)

The next order of business is the election of two members to the C.M.A.-C.P.S. Liaison Committee.

Now, Reference Committee No. 4 has some words about that Liaison Committee, and we will hold up that order of business with your permission until we have heard from Reference Committee No. 4.

(Discussion between Speaker Charnock and Executive Secretary John Hunton.)

SPEAKER CHARNOCK: All right, it will be Reference Committee No. 1 that is going to talk about C.P.S.-C.M.A. Committee.

Announcement by the Secretary on the nominations of members of Standing Committees.

Dr. Daniels!

REPORT OF THE COMMITTEE ON COMMITTEES

DR. DANIELS:

Committee on Associated Societies and Technical Groups:

Hartzell H. Ray	San Mateo	1954
James F. Regan	Los Angeles	1955
Gordon MacLean, chairman	Oakland	1956

Committee on History and Obituaries:

J. Marion Read, chairman	San Francisco	1954
John F. Barrow	Los Angeles	1955
J. Roy Jones	Sacramento	1956
George H. Kress	Ex-officio	
Editor and Secretary	Ex-officio	

Committee on Hospitals, Dispensaries and Clinics:

Jay S. Crane, chairman	Los Angeles	1954
Howard C. Miles	Salinas	1955
Karl Schaupp, Jr.	San Francisco	1956

Committee on Industrial Practice:

E. Vincent Askey	Los Angeles	1954
Packard Thurber, Sr., chairman	Los Angeles	1955
Harold Downing	Fresno	1956

We have made this nomination, though we expect this committee will probably be eliminated by the adoption of one of the resolutions. So, we have just renominated the former committee, and they may not have the privilege of serving.

Committee on Medical Defense:

Alfred B. Wilcox	Santa Barbara	1954
H. Clifford Loos, chairman	Los Angeles	1955
Leslie B. Magoon	San Jose	1956

Committee on Medical Economics:

L. H. Fraser, chairman	Richmond	1954
Roy Ouer	San Diego	1955
Robert Patrick	Taft	1956

Committee on Medical Education and Medical Institutions:

M. Laurence Montgomery	San Francisco	1954
Walter E. MacPherson, chairman	Los Angeles	1955
Paul Foster	Los Angeles	1956

Committee on Military Affairs and Civil Defense:

Justin J. Stein, chairman	Los Angeles	1954
Frank F. Schade	Los Angeles	1956
William L. Bender	San Francisco	1956
John C. Ruddock, consultant	Los Angeles	

Committee on Postgraduate Activities:

Lester S. Gale	Bakersfield	1954
Herbert W. Jenkins	Sacramento	1955
Edward C. Rosenow, chairman	Pasadena	1956

Committee on Public Policy and Legislation:

Dan Kilroy	Sacramento	1954
James C. Doyle	Beverly Hills	1955
Dwight H. Murray, chairman	Napa	1956
President and President-Elect	Ex-officio	

Committee on Scientific Work:

Howard F. West	Los Angeles	1954
George H. Houck	Palo Alto	1955
Robert L. Dennis	San Jose	1956
Secretary (chairman)	Ex-officio	
Secretaries, Sections on General Medicine and General Surgery		1954

Committee on Public Relations:

Dwight H. Murray, Chairman, Committee Public Policy and Legislation (ex-officio)
L. H. Fraser, Chairman, Committee on Medical Economics (ex-officio)
H. Gordon MacLean, Chairman, Committee on Associated Societies and Technical Groups (ex-officio)
President (ex-officio)
President-Elect (ex-officio)
Secretary (ex-officio)
J. Lafe Ludwig, Los Angeles
Frank A. MacDonald, Sacramento

Physicians' Benevolence Committee:

Axcel E. Anderson, chairman	Fresno	1954
Elizabeth Mason Hohl	Los Angeles	1955
Ford Cody	Los Angeles	1956

SPEAKER CHARNOCK: You have heard the report by the Secretary on the Council's nominations of members of Standing Committees. That requires the approval of the House. May we have a motion to that effect.

... It was moved and seconded that the report be approved....

SPEAKER CHARNOCK: It has been moved and seconded that the House of Delegates approve these nominations of the members of the Standing Committees.

Those who are in favor of approving these will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: They are appointed.

We will now have the report of Reference Committee No. 1, J. W. Moore of Ventura, chairman.

REPORT OF REFERENCE COMMITTEE No. 1

DR. MOORE: Mr. Speaker, and members of the House of Delegates: The duty of Reference Committee No. 1 is to review and to report upon the reports of the officers, the Councilors and Standing and Special Committees of this organization. For the sake of clarity and I hope brevity, we have divided our report into sections. I would first like to thank the members of the Reference Committee, Dr. Ralph Teall, Sacramento, and Dr. James Graeser, Oakland, for their assistance in the preparing the report.

Section 1. The committee has carefully reviewed the reports of the General Officers as printed in the Annual Reports Bulletin with the exception of the reports of the Secretary, Treasurer, and Executive Secretary which are being reviewed by Reference Committee No. 2. The committee wishes highly to commend the President, Dr. Lewis A. Alesen, and the President-Elect, Dr. John W. Green, for the excellent work they have done for the California Medical Association in the past year.

Dr. Alesen has received editorial comment all over this country for his clear and positive stand upon various social and political problems as well as the problems of medicine. The committee feels that Dr. Alesen has done yeoman service for the California Medical Association and we are sure that every member of the Association owes him a debt of gratitude.

Mr. Speaker, I move the adoption of this section of our report.

SPEAKER CHARNOCK: Is there a second?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report.

Is there any question?

... The motion was put to a vote and it was carried....

DR. MOORE: Both Dr. Alesen and Dr. Green have continued the practice of yearly visits to all of the component medical societies. The committee feels that they are very valuable indeed and should be continued. The committee recommends the approval of the reports of the General Officers.

Mr. Speaker, I move the adoption of this section of the report.

SPEAKER CHARNOCK: Is there a second?

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we approve this section of the report.

Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

DR. MOORE: Your committee has reviewed the report of the Council and recommends its approval. The committee hopes that each delegate has read the report of the Council since it is a brief review of the year's activities. This committee wishes to congratulate the Council on the work accomplished and to commend them for their untiring work in behalf of the California Medical Association.

Mr. Speaker, I move the adoption of this section of our report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

All those in favor will say "aye."

... The motion was put to a vote and it was carried....

DR. MOORE: Your committee has reviewed the report of the chairman of the Council, the report of the president of the Trustees of the California Medical Association, the report of the Executive Committee, and the reports of the Speaker and Vice-Speaker of the House of Delegates. The committee recommends the approval of all of these reports and again wishes highly to commend the officers of the Association who held these positions and made the reports.

It is noted that funds of the Trustees of the California Medical Association, in an amount exceeding one million dollars, are presently held entirely in low-interest Government obligations. It is suggested that investigation be made as to the possibility of investing these funds in equities providing a higher yield and not subject to the shrinking effects of further inflation. It is suggested that the Council in its capacity as the Trustees of the California Medical Association should consider this problem and if necessary make whatever changes in the by-laws of the corporation to accomplish this end are needed.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The report of Dr. Dwight L. Wilbur, Editor of CALIFORNIA MEDICINE, and the report of the Editorial Board of CALIFORNIA MEDICINE, Dr. Dwight L. Wilbur, chairman, have been reviewed. This committee recommends the approval of both reports and again would like to call the attention of the House to the fact that CALIFORNIA MEDICINE is one of the outstanding medical publications in the land. We commend Dr. Wilbur and the members of the Editorial Board for their fine work.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The committee has reviewed the reports of the various District Councilors and of the Councilors-at-Large. The committee recommends approval of all these reports. The committee hopes that every member of the House of Delegates and every member of the California Medical Association is aware of the amount of time these men must spend in working on the Council and the great effort and energy involved in fulfilling their duties.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this section of the report be accepted. Is there any question?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. MOORE: We have reviewed the report of the Legal Counsel and recommend its approval. It seems obvious to the committee from reviewing this report that our Legal Counsel must spend a great deal of time upon California Medical Association business. We commend Mr. Hassard for work well done.

Your committee has reviewed the reports of the following Standing and Special Committees: The Committee on Associated Societies and Technical Groups, the Auditing Committee, the Committee on History and Obituaries, the Committee on Hospitals, Dispensaries and Clinics, the Committee on Medical Defense, the Committee on Medical Economics, the Committee on Medical Education and Medical Institutions, the Committee on Scientific Work, the Advisory Planning Committee, and the Committee on Rural Medical Service. Your committee recommends approval of these reports. Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The committee has reviewed the report of the Physicians' Benevolence Committee and the Committee on Postgraduate Activities. We recommend approval of both of these reports. There is a suggestion in the report of the Physicians' Benevolence Committee that the contribution of the California Medical Association to the Benevolence Fund should be increased to more than $1.00 per member per year. Your committee recommends that this suggestion be referred to the Council for such action as it may deem advisable.

In the report of the Committee on Postgraduate Activities, the House of Delegates is requested to direct the Council to continue the allocation of funds for the support of that committee, thereby making possible postgraduate opportunities for its members. Reference Committee No. 1 is strongly in favor of this and so recommends.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. MOORE: The committee has reviewed the report of the Committee on Military Affairs and Civil Defense. The committee feels that the members of this committee have done excellent work. The committee was interested in the activity of the Northern California Advisory Committee in assisting relocation of returning medical and dental and veterinarian reserve officers to civilian practice after completion of their period of active duty in the military service. We feel that this is highly commendable and recommend that a similar activity be set up by the Southern California Advisory Committee. The committee recommends the approval of this report.

Mr. Speaker, I move the adoption of this section of our report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this section of the report be accepted. Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried...

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The committee listened with interest to the oral report of Dr. Dwight Murray, chairman of the Committee on Public Policy and Legislation. The committee recommends approval of the report and wishes to commend Dr. Murray, Dr. Kilroy and Mr. Ben Read for their excellent work on behalf of the medical profession in the State Legislature.

The committee has reviewed the report of the Committee on Public Relations and has listened with interest to the oral report made on the floor of the House. We recommend the approval of these reports and wish to highly commend Mr. Clancy and his assistants, Mr. Gillette and Mr. Pettis, for their fine work in the public relations field for the California Medical Association.

Mr. Speaker, I move the adoption of this section of our report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor please signify by saying "aye."

... The motion was put to a vote and it was carried....

DR. MOORE: The report of the Cancer Commission was carefully reviewed and the committee wishes to commend Dr. Ian Macdonald and the members of the commission for their excellent work in this field. The committee feels that their work in investigating the various so-called cancer cures as they arise is extremely important and should certainly be continued. The committee recommends the approval of this report.

Mr. Speaker, I move the adoption of this section of our report.

DR. ARTHUR A. KIRCHNER (Los Angeles): I second the motion.

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The report of the C.M.A. Blood Bank Commission has been reviewed and the committee recommends its approval. The committee feels that the California Medical Association can point with pride to the California Blood Bank system and the committee feels that Dr. John Upton and the Blood Bank Commission can take great credit for this fine accomplishment.

The report of the Committee on Industrial Health with its supplemental report has been carefully reviewed. This committee recommends that the proposals in the supplemental report be referred to the Council for appropriate action without specific action on the part of the House of Delegates.

Mr. Speaker, I move the adoption of this section of our report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The report of the C.M.A.-C.P.S. Liaison Committee has been reviewed. The committee notes that it has been recommended by the chairman, Dr. L. A. Alesen, that the C.M.A.-C.P.S. Liaison Committee be dissolved. In view of the recommendations of the C.P.S. Study Committee that have been adopted in the past by the House of Delegates your Reference Committee believes that this recommendation should be followed. We therefore recommend the approval of this report.

Mr. Speaker, I move the adoption of this section of our report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: The reports of the C.P.S. Study Committee and the C.P.S. Fee Schedule Committee were reviewed. The work of the C.P.S. Study Committee has been completed and previously reported upon. The activities of the C.P.S. Fee Schedule Committee have been largely integrated with the Medical Services Commission. Our committee recommends the approval of both of these committee reports.

The committee has reviewed the report of the Medical Services Commission including the supplemental report and recommends approval.

Mr. Speaker, I move the adoption of this section of our report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this section of the report. Is there any question?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. MOORE: Mr. Speaker, I move the adoption of our reports as a whole.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we accept this report as a whole.

Those who are in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . .

SPEAKER CHARNOCK: The report as a whole has been accepted from Reference Committee No. 1.

We wish to thank Dr. Moore, Dr. Graeser, and Dr. Ralph Teall for their work on this committee. (Applause.)

The C.M.A.-C.P.S. Liaison Committee has been discontinued by your recent action. There will be no action on Item No. 7.

C.P.S. PLAQUE FOR DR. CASS

At this time, the officers from C.P.S. have a little job they want to do, and I will ask them to come forward at this time.

Will the members of the Board of Trustees come forward, including the new members who have just been elected.

DR. JOHN W. RUMSEY (San Diego): This is not, as has been suggested, "The Last Supper." (Laughter.)

But, it is the end of the line in this particular job for a man who has contributed very much to C.P.S.

The doctors of California owe Don Cass a great debt. He has worked hard. His bald pate has taken many brickbats. A good many of them have bounced off; a good many of them have sunk in.

He has stood it well. He is a very vigorous individual, or he wouldn't have been able to.

I want to present to Don Cass, for the Board of Trustees, California Physicians' Service, and I feel I represent California medicine doing this as Past President, a plaque for the service he has done for C.P.S. and for California medicine.

Don! (Standing applause.)

DR. DONALD CASS: The last time I got one of these plaques was several years ago when I retired as President of the C.M.A. I couldn't talk. I am not doing so good now. (Laughter.)

Fellows, I haven't done anything special to deserve such a thought as this, but I will tell you one thing, as long as I live I will treasure it. (Applause.)

. . . Announcements. . .

VICE-SPEAKER BAILEY: We will now go to the report of Reference Committee No. 2, Dr. Robertson Ward, chairman; Dr. John E. Vaughan, Dr. Thomas P. Hill.

Dr. Ward!

REPORT OF REFERENCE COMMITTEE No. 2

DR. WARD: Mr. Speaker, and members of the House of Delegates: Your committee, composed of John E. Vaughan, Thomas P. Hill and Robertson Ward, chairman, has studied the report of the Secretary and wishes to emphasize that the membership read the proceedings of the Council in order to be kept informed upon important decisions reached by that august body.

That was recommended in the Secretary's speech, and we would like to emphasize that part of it.

Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded that this section of the report be adopted. Those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: It is accepted.

DR. WARD: In the report of the Executive Secretary, it was thought worth while to emphasize the position of leadership in which California finds herself. This is brought out by the fact that California holds second place only to New York in the number of delegates to the American Medical Association. We feel that California holds second place to none in influence and guidance of national policies. There is a reason for this and that reason is to be found in our tendency to anticipate conditions before they actually come into being. It is gratifying to note that our Executive Secretary is in a position to offer leadership as part of the advisory committee of the American Medical Association's Public Relations Department.

We feel that our final recommendation today will give evidence of California's forward looking attitude for the good of American medicine. Your committee respectfully suggests the perusal of the Executive Secretary's report by all members of the profession in California.

Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded.

All those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. WARD: Your committee has studied the Treasurer's Report and the Budget. We were pleased to note that the Council of the California Medical Association is concerned about and anxious to reduce dues of our members. However, in view of the impending activities in relation to a basic science law and the expenses of the Association relating thereto, your committee recommends a reversal of the stand taken by the Council and favors maintenance of the regular dues at $40.00 per year.

Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded. Is there any discussion?

Those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. WARD: I know that it is unusual to have a reference committee come out and vote for a con-

tinuation of dues, or not vote for a reduction of dues, but I think there is plenty of evidence to show that that may be money that we will need.

The final matter referred to your reference committee was the resolution by J. Lafe Ludwig calling for an increase in the California Medical Association dues of $25.00 per year to be turned over to the American Medical Education Foundation.

In keeping with California's traditional anticipation of coming events, your committee offers the following substitute resolution in hopes that it will set the pattern which can and will be followed by other states to provide medical education independent of Government subsidies. The resolution is:

WHEREAS, The need for funds for the maintenance of our medical schools is obvious; and

WHEREAS, These funds must be supplied by medicine rather than through government subsidies; therefore be it

Resolved, That the dues of the California Medical Association be raised $25.00 per year for active members; and be it further

Resolved, That the dues thus collected be forwarded to the American Medical Education Foundation for distribution among those medical schools which do not receive the major portion of their support from tax sources.

Now, before moving the adoption of this section of the report, I want to point out to you that in the previous section of the report we have called for dues remaining at $40.00, and that has been passed by you.

Now, in adopting this section of the report, you are making the dues $65.00 a year, and the funds will go as were directed in this motion.

Mr. Speaker, I move the adoption of this section of the report.

... The motion was seconded....

VICE-SPEAKER BAILEY: It has been moved and seconded. Is there any discussion?

DR. JOHN W. GREEN (President-Elect, Vallejo): Mr. Speaker, members of the House: As you know, of course, this is a very important thing. There are two sides to this debate. My side is the affirmative side, because by the action of your Council, I was made the chairman of this committee for the State of California.

I have given it a great deal of time. I have been to Chicago on two separate occasions to hear the reports that come from all over the United States on this subject.

The last time I was there in January, we spent an entire day receiving reports from the forty-eight states, and the American Medical Association Woman's Auxiliary.

At this meeting, Dr. Anderson, who is the chairman for the American Medical Education Foundation fund, had this to say, and I would like to read it to you. Although it takes a little time to read, I think it is necessary for me to do so:

"Dr. Donald G. Anderson gave a brief summary of the history of the Foundation and the National Fund for Medical Education. He then read a letter from President Eisenhower to Mr. Sloan Colt, president of the National Fund for Medical Education, in which Mr. Eisenhower stated:

"1. He hoped those selected to lead the campaign to alleviate the financial stress in our medical schools would cooperate willingly despite their other interests;

"2. Private support of higher education in America is fundamental to the democratic tradition;

"3. The nation's 79 medical schools are the keystones of national health, the prime factors in our ability to maintain production levels and man our armed forces and they must not be prevented from meeting their responsibilities because of financial stress; and

"4. Medical education can best be financed through a central fund.

"In the letter, Mr. Eisenhower stated that it was impossible to exaggerate the vital importance of the fund to our national welfare and he assured Mr. Colt of his wholehearted support."

Now, Mr. Colt happens to be the chairman of the National Foundation for Education, of which medical education is a fraction. We are dealing principally within our House with the fraction.

The Woman's Auxiliary report was given by Mrs. Frank Gastineau, chairman.

It was as follows:

She advised that the Auxiliary also publish a pamphlet entitled, "Your Help is Needed by the A.M.E.F.—Every Auxiliary a Contributor." She further reported that the Auxiliaries had contributed $16,064 to the Foundation since last June and that all Auxiliaries had been asked to send in their contributions before June 1."

Further in the proceedings in the morning, Dr. Herman Weiskotten, chairman of the Council on Medical Education and Hospitals of the American Medical Association and a member of the A.M.E.F. board of directors, addressed the state chairmen and asked them to do everything possible to counteract the claims that medical education has become unjustifiably expensive. He reported that the greatly increased cost of the conduct of medical schools today is justified by the vast changes in medical education in recent years.

Dr. Weiskotten advised that in order to meet the responsibility brought by the advances and changes in medical education, it has been necessary for schools to provide satisfactory laboratories, equipment and personnel for the basic medical sciences as well as adequate hospital and outpatient facilities, with competent teachers to guide and supervise students in their clinical training.

Medical education in the United States has become individualized, he added, and it has laid a foundation for greatly improved types of medical care for the American public.

Dr. Weiskotten also mentioned that practically all of the research programs of the medical schools

have been supported by outside grants and are not included in the operating budgets of the schools. He further stated that it is the instructional budgets which are to be balanced through the efforts of the National Fund and the Foundation.

Now, somebody has said, "Well, how long is this program subsidy by us going to continue?" That is a pertinent question to ask. We realize that it has to go along, perhaps as long as we graduate medical students.

In view of the national need in this respect, I want to say how they feel about it on Capitol Hill in Washington.

Senate Bill 1748 to grant the National Fund for Medical Education a national charter was introduced in the Senate last week by Senator Robert A. Taft of Ohio. Through the proposed legislation, the National Fund would be on the same footing as the American Red Cross and a handful of other agencies who enjoy the prestige of a congressional charter. Also it would help immeasurably in the fund's approach to industry and business for support of their program to help the nation's medical schools maintain financial independence and regain solvency.

So, you see, there are many people thinking about this problem besides us.

I don't have to say to this House of Delegates that every man here knows he owes something to his medical school. That is a self-evident thing. But the question is, how many would give it voluntarily? In last year's report, California stood at the foot of the list with a little over $9,000, with a membership of 11,000 men and women.

As your representative in Chicago, I felt very small in that meeting because a state like Nebraska raised $48,000. Think of it! Small states like South Dakota, Nevada, little areas, did practically as well as we did.

In my remarks to the Council the other morning, I tried to put this whole matter on the basis of need, and voluntary subscriptions to take care of this need. There are men who feel that the voluntary method of doing it is the proper way of doing it. But, I can assure you that that has not been the answer to the problem, much as it might be.

I didn't state before that committee and the Council one other thing. I tried to keep this matter out of the debate, but I must say here and now something that I should have said at that time. Perhaps it is better to say it here: that when bills for subsidization of the medical schools have been presented before Congress and heard in committees, principally the Committee on Labor and Education, we have always had on that committee one of medicine's greatest adversaries, Senator Murray from Montana. He attacks us from every source possible. He has always been for compulsory health insurance and bureaucratic and political medicine. He still is.

He made this remark in his testimony, that to his certain knowledge in 1951 only 1.3 per cent of the doctors in this country had given voluntarily to this fund.

Now, in the National Foundation, ladies and gentlemen, of which I say we are a part, they have men collecting funds from industry, from pharmaceutical houses, other groups, for instance the Auxiliary, and last but not least, somebody to reckon with nevertheless, they get certain funds from labor organizations, and they have representation in the committee of the National Fund.

They know exactly year by year to the cent how much we contribute as doctors to this.

Now, it would be a sad commentary if when that bill is here again, which it will be this year, that Senator Murray could point to the great state of California and say that we were not in favor of this thing as evidenced by a defeat of a resolution of this character.

Now, I should like to have Mr. Murray know that we still feel that we owe something to medicine. The Auxiliary members seem to appreciate it much more than we do, because they are quite active in that.

So, gentlemen, I should make this one other remark; it has been brought up before that the private schools didn't participate in this thing as much as they should. In other words, tax-supported schools were getting just as much of the 1/79 cut of it as private schools. We know that. That has been considered. That policy has been changed. You can earmark your money for any private school you wish, and every cent of that earmarked money will go to your school, besides a proportional cut of the balance of the fund.

Further than that, I was just reminded here by some statistics a minute ago, that I was entirely in error in saying what proportion of the entire fund came from that National Foundation, and I find out by the latest report that they are participating almost dollar for dollar instead of on a basis of 1 to 4.

So, fellows, get behind this resolution. Pass it, I urge upon you. (Applause.)

VICE-SPEAKER BAILEY: Dr. Wayne Pollock.

DR. WAYNE E. POLLOCK (Councilor, Eleventh District): I wish to speak in opposition to this resolution. First I want to make it clear that I thoroughly approve of contributing to medical school funds by physicians and the public in general. I, personally, do contribute. I have had some small part in assisting to raise funds for one of our private medical schools in Northern California, and I am happy to say that that institution alone raised from its alumni last year about ten times the sum which Dr. Green has mentioned as being given by California doctors to the Medical Education Foundation Fund.

Now, I think it would be a mistake to do this in this way, because I think the principle is wrong. You will recall that some three years ago C.M.A. gave $100,000 of its funds to the Medical Education Foundation Fund.

Of that sum, and from the fund that year, ap-

proximately $15,000 was distributed to each medical school in the country, including our tax-supported schools. In other words, less than the amount which we alone gave returned to our schools, less than half of it returned to the three schools which needed it.

Now, our tax-supported schools have no problem in finances. They may not have everything they want, but they have essentially everything they need. And if you give them many times the amount of money that we are talking about today, the Legislature would simply deduct that from the budget and continue to give them what they need.

The prime need is our private schools, our privately-endowed institutions, and some of them are really in distress.

It is proposed here that by levying $25.00 additional dues on our membership, we would raise almost $300,000, which we would then put in this fund. Obviously, only a fraction of this would ever return to California.

I am just provincial enough to think that charity begins at home, and I wonder if maybe we shouldn't, before we start worrying about all these schools in the country, worry about our own here, whose problems should be a little more, perhaps, paramount to us than state universities throughout the country; and even some of the other endowed medical schools are more fortunate than some we have here.

It has been stated that we can now fix this up and earmark it. After the first outcry among doctors as to the distribution of this—and believe me as I went around through the twenty counties I am supposed to represent, I was in effect reprimanded on several occasion by a number of doctors who had two complaints. First, they felt it was morally wrong for the Council of C.M.A. to have distributed that amount of our assets in that fashion, and the philanthropies were properly the right of the doctor involved.

Secondly, they objected to having it evenly distributed among tax-supported and non-tax-supported schools.

The following year, in order to allay criticisms of the latter, it was announced that you might earmark your donation for the school of your choice, and that was done, but the distribution was the same. If Dr. Zilch earmarked his $100 to his university, the university received exactly the same thing, and it was the old Community Chest distribution idea. If you didn't like one agency, and you wanted to give it all to another, they still ended up with the same total sum of money.

I understand that has now been changed, and earmarked money is received in addition to the money which is evenly distributed.

You might be interested to know the second year there were two state universities that refused to accept this. I understand one was the University of Oklahoma, and they returned their second grant and said, "We haven't spent our first grant." When they returned it, they said, "Give it to somebody who needs it."

Now, obviously, that is what we should do. We should give it to those who need it.

I think it would be wrong to make this a matter of dues, because of the principle involved.

For many years, we have had that slogan, "The voluntary way is the American way." We have refused to give our wholehearted endorsement to medical plans that do not offer their participants free choice of physician, the right to change their doctor if they don't like him, free choice of hospital.

We are all proud of the activities of our president in going up and down the country, extolling the virtues of free enterprise and freedom to make that possible.

We put on a program last night entitled, "Blueprint for Freedom." What kind of hypocrites would we be if we here today decide how much a man gives, and what he gives it for?

If we embark on this principle, what is to keep some enthusiast from coming up next year and saying, "The Polio Fund, or Diabetes Fund, or epileptics need money, and we think you should give so much," or even the Community Chest?

I urge you to let every man give to whom he wants the amount he wants to give, and I can assure you there are many more thousands of dollars being given in California by doctors than would be indicated by Senator Murray, and Dr. Green's analysis, which you have just heard.

I hope you defeat this resolution. (Applause.)

VICE-SPEAKER BAILEY: Dr. Ed Reynolds!

DR. ED REYNOLDS: I have been impressed by Dr. Green's eloquent defense or support of the idea that we contribute by assessment to medical schools.

Certainly, it has long been traditional among medical men to train our successors. It was done by Hippocrates. It was done by doctors a hundred years ago, who took apprentices into their offices and trained them.

Today, perhaps it is entirely fitting that since we can no longer take our apprentices into our offices, that we contribute in an organized manner to the support of medical schools.

We contribute in an organized manner to a great many activities and charities which were formerly a matter for the individual or the family.

Like Dr. Pollock, I see one or two difficulties. Perhaps certain inequities might arise in any endorsed program. In the first place many of us contribute a great amount of time. Some men give thousands of dollars of their time every year for the training of medical schools. To ask them to contribute additional money is hardly fair.

Others have no opportunity to participate in medical education. Some physicians contribute heavily to their very own medical schools, particularly when they are graduates of schools which are privately endowed.

One school in this state, supported by a religious body, receives little help outside of its own denominational members and its own graduates.

I think the idea is beautiful: perhaps it is a wonderful one. I am just wondering whether we have a moral right to levy this tax for gift purposes on our membership.

I wouldn't oppose it personally, but I wonder whether we shouldn't either submit such a thing as this to a referendum or vote of the membership, or, at least, ask that the councils of a majority of the counties approve this before it is adopted by us. (Applause.)

VICE-SPEAKER BAILEY: Dr. Teall!

DR. RALPH TEALL (Sacramento): Mr. Speaker and members of the House: I have been a Councilor for an hour and twenty-seven minutes, and am about to prove my unfitness for the position. (Laughter.)

I can only grant 100 per cent support of practically everything that has been said by Dr. Green.

However, last night I was thrilled as most of you were by the eloquent defense by Clarence Manion of the principles of freedom which made of the United States the greatest country the world has ever known, and has brought each individual citizen of the United States to the greatest era of self-responsibility.

I am impressed in the light of his comments with the fact that government is being asked to do a great many things which should be the function of the individual, and that with each request we make of the government to assume individual responsibilities, we move closer to the ideal of the socialists.

It is my humble concept that this applies not alone to Federal government, state government, local government, but also to the government of such organizations as our own. It has been held by courts that there is an inherent property right in membership in your county medical society, and I assume that there is also an inherent property right in membership in the California Medical Association.

If a man does not pay dues, he forfeits this property right. In effect, then, we are demanding that unless a man contributes whatever amount we say, $25.00 or any amount in the form of dues, he forfeits the property right which is inherent in his membership in the California Medical Association.

I wonder if we want to go that far. It seems to me that all of us are intensely interested in the future of medical schools and in their financial support.

I am quite certain that the voluntary method of soliciting these funds, at least among California doctors, has not been exhausted.

I am quite certain in my own mind that many of us are totally unwilling to assume the coercive power, the police power of government, of our own government, our own Council, or this House of Delegates, to force contributions which should be voluntary contributions.

I would, therefore, move, Mr. Speaker, that this resolution be amended to defer action until the next meeting of the House of Delegates, following a referendum of county medical society boards of directors to ascertain the position of the members of the California Medical Association. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Dr. Teall.

Is there a second to the motion to amend?

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Discussion on the motion to amend is before the House. The motion to amend is to the effect this be referred to the board of directors of the county medical associations.

A MEMBER: Mr. Speaker, may we discuss the original motion?

VICE-SPEAKER BAILEY: As soon as the motion to amend is disposed of.

Dr. Askey, do you wish to discuss the motion to amend?

DR. E. VINCENT ASKEY: I do, sir.

In discussing the motion to amend, I have to discuss the original motion also, sir, but I direct it to the amendment. (Laughter.) I will try to follow the rules of order, sir.

The discussion has come up that we should send our money to California institutions. Many of us in this state, in fact, perhaps the majority, are men who have come to California from other schools of the United States, some of which are very small institutions, which have delivered to California some of our best physicians.

If we as loyal Californians—and I am one—direct that it go only to the California institutions, it takes away from the possible good for the benefit of medicine as a whole.

As I look at this amendment, it refers to the membership of our Association of a proposed referendum and to our Council. It seems to me that the original resolution came from the Council of the California Medical Association. In discussing this action, they have already, as it was called to our attention, given $100,000 as funds of our Association to this fund.

I might tell you that that gave to American medicine and this fund a great lift, and it directed to many other associations of the United States, attention to it that otherwise could not have come.

The decision to do that was purely and simply that of the Council of this Association.

Now, these proposed dues will be dues, and there is a move to indicate that California is leading and believes that this is the right thing to do.

Other state associations have already added to their dues for this purpose, notably Illinois, Tennessee, and others. So, unfortunately from our standpoint, this is not the primary action this way. I wish it were.

Now, many of us have had in the past good intentions. Personally I have given to my medical school and I felt that the rest of it was being taken care of in a good way by the $100,000 of my Association.

Many of you gentlemen here today have had just as good intentions as I have had, but somebody has said that the roads to hell are paved with good intentions that were never carried out.

Now, those that agree that this is a good thing would like to see this put in an organized way so that that which we can afford to do will be placed at the right level.

I would agree with a lot of the discussion of Dr. Teall and the rest of them and Dr. Wayne Pollock, that some better method should be worked out. I stand second to none of you in believing that we should have it voluntary and should do it as individuals. I would suggest that if you wish to do that, that we would look at it like this: that if these dues are placed on, and I hope they are, that those of you who feel that you don't like it that way would just in your mind feel, "Well, my dues are going for the ordinary upkeep of the Association, and the remainder of those dues from the other fellows are going to the other part." It is merely a matter of bookkeeping, gentlemen. (Laughter.)

I would suggest this, that this not be a direction that these funds absolutely must go to that, but raise your dues so that if the Council of the California Medical Association shall see fit that certain of your funds which are designated should go one way or the other, that you leave the decision of what these funds shall be used for to the discretion of the Council.

That way, it is true your dues will be raised to $65.00, but you have a group of Councilors that can be trusted to put it to the best place for American medicine.

I am talking to the amendment now. If you want amendments, I think that you should amend it that these additional funds be raised by the dues, and the Council be instructed to put it to the best use for the development and sustaining of American freedom in medicine which, I think, is very important.

I ask that you defeat this amendment, and if you desire, I will introduce another amendment after this is proposed, that the dues be raised to $65.00, and that the Council be instructed to use the dues of the California Medical Association for their appropriate service, knowing that these other funds are legitimate and very fine things to be discussed and acted upon, I think that we must and should in some way take the lead.

Now, Dr. Green made one statement and I hope it is true, that the distribution of these funds to the state tax-supported institutions has been taken care of.

If I read the original resolution which was presented here, I understand this was to go to non-tax-supported schools, and if that is true I think it will clarify the situation.

I hope that you defeat this amendment on that basis, and I hope that the original motion will be sustained. Thank you.

VICE-SPEAKER BAILEY: At this time you can speak to the amendment in the same general way that Dr. Askey did. (Laughter.) Dr. Young.

DR. J. E. YOUNG (Fresno County): Whenever a novice sees a master demonstrate a difficult procedure, he thinks it is easy. I shall try to do the same things Dr. Askey has done. Perhaps in doing so, I will mangle it.

It is the duty in my opinion of every representative person who is in a hall of this kind to represent his constituency, and I am firmly of the opinion it is not the right of any representative in any legislative hall to strengthen the power of the government of which he is a part, but to ever maintain the powers and the rights of his individual constituents. (Applause.)

One of the difficulties we find ourselves in, both locally and nationally, as well as state-wide, is the fact that representatives of their constituents have lost sight of the fact that they represent their constituents, and in so doing they intend to strengthen the hall in which they find themselves.

I am by birth and by choice a Democrat politically, and that birth and that choice are based upon the primary and fundamental concept of that party, the Federal government and all government shall be limited in its powers.

I propose to the best of my ability to see to it that those powers are limited.

Membership within the California Medical Association determines to a large extent whether or not the individual physician shall practice medicine in his locality, and I cannot see that it is a power of this organization to give to itself the right to delve into the pockets of each one of our members and make a contribution to something that is not as yet a component part of our organization or of our profession.

Mr. Chairman, it is my opinion that this motion to raise the dues $25.00, or to amend the motion, is not in order at this time, because it is my feeling that the constituents that I represent are not ready for such a thing, and I do not propose to impose upon them by my vote.

Mr. Chairman, I urge you to defeat this proposition. (Applause.)

VICE-SPEAKER BAILEY: The Chair has no wish to limit debate.

The point at issue at the moment is the amendment as to whether this will be referred to the committee.

Dr. Crane, do you wish to speak to that?

DR. J. J. CRANE (Los Angeles County): I wish to speak against the amendment, but from a different angle.

If you place this proposition up to a vote to the membership at large, and if one man votes against it, you are right back where you are today, gentlemen. They still can raise the question whether it was legal or whether you are taking something away from one man that you shouldn't have taken away from all of us. So, I don't believe that the amendment would solve our problem.

VICE-SPEAKER BAILEY: Dr. de los Reyes, do you wish to speak to the amendment?

DR. DE LOS REYES: Yes, sir.

Mr. Speaker and fellow members: Several years

ago we had a fight in California. Remember that by just one single vote we won a fight against a government that was very much bent on socialistic medicine in California. The Council assessed us $100. Some of us complained. Nevertheless, we defeated it. It was a socialistic tendency in the state of California which was not good for the welfare of medicine.

I believe that we should defeat this amendment, and I am a member of the Council of the Los Angeles County Medical Association. I feel that the least we could do is contribute $25.00 to this great cause. Were we not to do so, we probably would find that this government and those perhaps not in office now, but those that were in office a few months ago, will say that the California Medical Association defeated a resolution that was presented to continue the free choice of the practice of medicine.

I am a Republican by choice. (Applause.) As such I urge you to defeat that amendment, because the least we can do is contribute $25.00 to that fund so we can preserve the right of the private medical schools in this country.

I also contribute to medical schools, but it is not going to hurt me, and it is not going to hurt you to contribute $25.00.

Please, fellows, think what the impact is going to be on the American public and on the American government when they find that the members of the California Medical Association voluntarily or willingly, if you wish, have contributed $25.00 to the welfare of this country and to the welfare of free medicine in the United States. (Applause.)

VICE-SPEAKER BAILEY: The debate continues on the amendment.

The Chair would like to bring the amendment to a vote.

PRESIDENT-ELECT JOHN W. GREEN (Vallejo): May I say just one word?

VICE-SPEAKER BAILEY: Dr. Green.

PRESIDENT-ELECT JOHN W. GREEN: Mr. Speaker, members: The whole thing revolves around one thing; what will Washington and Congress determine is our intent?

It could be very well interpreted on Capitol Hill that our intent in this amendment is to escape our responsibilities. In saying that, I want to refer to the actions of one person, because the amendment has to do something by mechanism, and so forth, refer it to the Council or to some active committee, to get this money on a voluntary basis.

The great state of Nebraska has a very well known surgeon by the name of McGuire from Omaha. Now, Nebraska has also a medical school, Creighton University, as you know, which is not a tax-supported school. But they needed a lot of money. They could not get it on a voluntary subscription basis.

So, one of their members by the name of McGuire went out on his own, and by his personal efforts, calling upon doctors by appointment, knowing his purpose, he got $47,000.

But, gentlemen of this House, will you name me in this House a McGuire?

VICE-SPEAKER BAILEY: Dr. Green is against the amendment. (Laughter.)

Dr. Ward, do you want to recapitulate the important details of this?

DR. ROBERTSON WARD (San Francisco): I would like to very much, Mr. Speaker.

As long as the amendment reverses the original resolution, I think maybe I can talk to it without being out of order.

The discussion before our Reference Committee was whether the Council was morally justified in assigning $100,000 to this fund just on its own judgment.

I think these things should be decided by the grass roots, and I consider this House of Delegates the grass roots of the California Medical Association.

Now, the amendment has referred this back to the county medical society.

We had a good deal of discussion in the Reference Committee meeting as to just how the county medical societies felt about this, and some of them have been canvassed, and they have given their delegates definite instructions. For instance, one of them would go for $25.00, but not more, on this proposition.

So, I don't feel that we are going past the county medical societies when we ask you gentlemen who represent the county medical societies and your districts to vote on this thing. I think we are going back to the grass roots.

I think it would be morally wrong if this had come from the Council as suggested to you. I feel just as Dr. Teall does, that if they weren't being given a chance here in this body to vote for or against this, that it would be morally wrong to add this to the dues. That is why I think the origin of a motion to do this comes legitimately from this body.

The remarks that Dr. Pollock made really don't hold as applied to this motion, because I would like to read to you again the second resolve which takes this away from the tax-supported institutions. I think this is the most important part of the resolve, because I am a graduate of the University of California, and I pay my taxes to support the University of California. I am unwilling to see funds collected in this fashion go to the benefit of the University of California, which is supported by taxes, and I think that is understandable by any of you.

We have tried to eliminate that in this motion, and I will read for you again the second resolve:

Be it further

Resolved, That the dues thus collected be forwarded to the American Medical Education Foundation for distribution among those medical schools which do not receive the major portion of their support from tax sources.

I urge you to turn down the amendment, and vote the resolution.

VICE-SPEAKER BAILEY: Are you ready for the question?

Dr. Askey!

DR. E. VINCENT ASKEY: I would like to move an amendment, sir.

VICE-SPEAKER BAILEY: An amendment to the amendment?

DR. E. VINCENT ASKEY: I move, sir, that this amendment be substituted for the first amendment.

You understand parliamentary procedure, and I don't need to explain it to you, that a motion can be amended twice. This is the second amendment, but by moving it be substituted for the amendment, it takes precedence.

I move that the dues of the California Medical Association be increased $25.00; the Council of the California Medical Association in its best judgment to distribute this money to the best interests of the private, non-tax-supported medical schools for the purpose of the best interests of medical education in America.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Dr. Bullock!

DR. L. T. BULLOCK (Los Angeles County): I think everybody here wants to help education; everybody wants to do his part. I think the majority is against enforced taxation. They do not think this is the way to do it.

We can accomplish both of these. We can use the facilities of the California Heart Association to collect this money on a voluntary basis.

I think the best way to do this is to defeat this present amendment and amend it again. Another amendment is not in order at this particular point, but we could change it so that the California Medical Association would send out a request along with the dues for a voluntary contribution of $25.00 by each member.

I think the majority would be happy to do it. I think we would raise the money, and I think we would avoid the aspects of enforced taxation on a matter that is not properly a matter for force within this organization.

I, therefore, recommend this amendment be defeated, and if it is defeated, will propose such an amendment whenever it is in order. (Applause.)

DR. JOSEPH W. TELFORD (San Diego County): I think there has been considerable discussion here which, to me, might very well be continued through the lunch hour in caucus.

Therefore, I would like to move a postponement of action until we reconvene after lunch.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Is that a motion to recess at this time, or a motion to lay on the table?

DR. TELFORD: I move to recess at this time.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: We have a second to the motion, but we have announcements.

. . . Announcements. . . .

SPEAKER CHARNOCK: When we meet again at 2:00 o'clock, we will meet in executive session for a short period of time. Of course, only delegates and alternates will be admitted to that session.

. . . Announcements. . . .

VICE-SPEAKER BAILEY: We will go back to the original motion to recess.

Those in favor of recessing at this time until 2:00 o'clock will say "aye."

. . . The motion was put to a vote and it was carried. . . .

. . . The Wednesday morning meeting recessed at 12:10 p.m. . . .

Wednesday Afternoon Session

The regular session of the House of Delegates of the California Medical Association was called to order at 2:20 p.m. in the Renaissance Room by Speaker Donald Charnock, who presided.

SPEAKER CHARNOCK: When we recessed for lunch, we were discussing an amendment by substitution to refer to Reference Committee No. 2. Dr. Bailey was struggling with that. We will allow him to do it again. (Laughter.)

VICE-SPEAKER BAILEY: Thank you.

To get back to the situation where we left off, we might ask Dr. Ward to brief us on the original proposition.

Would you like to do that?

DR. ROBERTSON WARD: Yes.

Mr. Speaker, I would like to brief you on the original resolution and on the amendment to the resolution and the substitute resolution.

Am I privileged to do that?

VICE-SPEAKER BAILEY: Yes, you are privileged to talk about the substitute. That is one thing you haven't discussed yet.

DR. ROBERTSON WARD: Well, to go back to the original resolution, I have no desire to change that. I have a desire to say to you that it has been pointed out to me, and I quite agree, that I misinterpreted the original amendment.

The original amendment was not to kill my resolution, but to defer the decision on it until an opportunity had been had to talk it over in the county medical societies.

If this is the intent of the amendment to the resolution, I am not opposed to it.

I thought that bringing it up here was plenty democratic, but I can be convinced by Dr. Teall or Dr. Magoon or anybody else that there are more grass roots maybe than the grass roots right here.

So, the remarks I made against the amendment to my resolution are hereby withdrawn.

Now, I don't suppose I am up here to discuss parliamentary procedure, but I don't think the substitute resolution that took the place of the amendment is really in order, because it doesn't discuss the fundamental thing that the amendment did. It changes the original resolution.

But, my understanding of it is that you can't put in a substitute resolution which considers an en-

tirely different matter, and I bring that to the Speaker as a possible ruling that the substitute resolution be declared out of order.

VICE-SPEAKER BAILEY: Well, there are two things we could do now; declare that out of order, or we could have the entire matter referred to a committee, which would take all the amendments and the original motion.

Dr. Armstrong!

DR. CHARLES D. ARMSTRONG (San Mateo County): Some of the medical schools not now supported by state funds have long since had fund-raising activities of their own, and have begun such fund-raising activities among their alumni.

These activities are apparently not well recognized by the public, including some members of the public who have been elected to the Washington office.

Stanford and Harvard medical schools, to my certain knowledge, have raised sums of money by this means, which may be in excess of that which might be raised by the proposed arbitrary assessment.

Because we need to know many things, and in addition need time for the medical societies at the innermost grass roots level to study this situation, I feel that it is important to find out preferably from the medical schools themselves several things:

First, the amount of contribution from private individuals to the medical schools in question.

Secondly, whether such private gifts may most profitably be given by the individual directly to the school, or by the individual through the channels suggested by the American Medical Association, so that supplementary monies from other sources may be added for the further benefit of the medical schools.

It is for this reason that I should like to make a motion to refer this problem again to Reference Committee No. 2 for a further study and the answer to these questions.

VICE-SPEAKER BAILEY: There has been a motion to refer. Is there a second?

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: This is a motion on the advisability to refer this to a reference committee, and discussion on the question of referring it. Is there any discussion?

Dr. Bender, from San Francisco! This discussion will be on the question of referring the entire problem to the committee.

DR. WILLIAM L. BENDER (San Francisco County): Mr. Speaker, members of the House: I think this matter is too urgent to bury it in committee. I am in favor of giving contributions to the medical schools in order to keep them free and democratic. I believe we are going about it in the wrong way in the original proposition. However, to go to the opposite extreme and bury it at this time is unwise too.

I talk against this resolution which has just been made because I think there is a better way. Once we can clear the board of all these resolutions and amendments we have before us and get a constructive motion consisting of two things, we will be making progress.

The two things are, one, referring it back to the county societies and constituents of our House of Delegates for definitive action relative to an increase in dues.

Number two—in the meantime let us get some action on this as members of the House of Delegates and C.M.A., and make an active campaign to get voluntary contributions, including putting reminders and factual data about the need of this money into the envelopes that the county society sends out for annual dues.

I think that is the approach. We will be studying it. We will be acting on it at the same time.

VICE-SPEAKER BAILEY: Is there any further discussion on this motion to refer?

Dr. Burt Davis, of Santa Clara.

DR. BURT DAVIS (Santa Clara County): I am in agreement with what Dr. Bender says, and I am also totally in agreement with what Dr. Armstrong says. I would like to make a suggestion that we follow Dr. Armstrong's advice and refer this to the committee. If this action is taken, then we may very easily adopt a motion to reconsider the dues as they were established this morning at a point of $65.00, with the provision that the Council, on the advice of this committee, may reduce the dues back to $40.00 if they so indicate.

. . . The question was called for. . . .

VICE-SPEAKER BAILEY: Dr. Mulfinger.

DR. CARL L. MULFINGER (Los Angeles County): Mr. Chairman, and members of the House of Delegates: This is quite an involved question. It involves a peculiar faith in human nature.

For the past two years it has been my privilege to be a member of the health committee of the Community Chest in this area, and these men are professionals in collecting money to run the Community Chest. If they weren't, they wouldn't be there.

They tell me that only 20 per cent of our population in this area would make contributions voluntarily to anything in the Community Chest.

So, evidently, along the line somewhere, some subterfuge or coercion, or whatever you want to call it, has to be used to get a wider distribution of contributions to these eleemosynary funds.

I think we are in somewhat the same predicament. I think if we left this wide open, 10 or 20 per cent of our members would contribute to their alma mater and help medical education. If we left it alone, the other 80 per cent will be indifferent. I want to bring this point up because I think it is important.

VICE-SPEAKER BAILEY: Thank you.

Dr. Mulfinger is against the motion to refer, I take it.

DR. L. H. FRASER (Alameda County): Mr. Speaker, I agree with Dr. Bender that this should not be tabled. I think the issue is very important.

Here this morning we stressed the dire need of medical schools. If you want to pass this up to the next session, let's quit stalling. If this thing is worth our consideration, let's take some action, wise or unwise, and I think we have enough faith certainly in all of you fine men that we will come up with a wise answer after we have listened to all the deliberations.

I happen to have been a campaign chairman for United Crusade. It so happens that in Alameda-Contra Costa County last year they did something that I think we should consider very seriously when we think of voluntary subscriptions.

The Association took upon itself the task of collecting from all the doctors, and it was arranged through what I thought was a rather clever medium, with the result that the profession not only got 50 per cent more money from the doctors, and willingly, voluntarily, than they have ever given before. But the most important thing I want to talk about is from the standpoint of public relations, because so far your public relations here have not been too good this morning.

We have gotten in a mess and rather than send the mess back to the kitchen, let's see if we can't salvage some public relations.

The program then evolved to the point where the press in Alameda-Contra Costa County was very generous in recognizing the act that the society had done.

Now, my original proposition was this: to come up before you and tell you that we all recognize the need for aid to medical education. But, I think that twenty-five bucks is not enough. I think we are a bunch of pikers when we won't commit ourselves through an addition or a setting of the dues at $25.00.

A lot of us, particularly those that won't give voluntarily, would be happy to sit right there. It would have been a beautiful gesture, and $25.00 would have been it. It will never have a chance, and it will go back to a voluntary contribution.

Now, I recognize the principle involved in the controversy of the compulsory feature of this thing. For that reason, I think the $25.00 should be kept out of the dues. I think that if we want to make a contribution, let's do it.

Or, there is another way to do it, but I am not going to bring it up at this time except to stress this: Somewhere along the line we can salvage some principle of public relations perhaps, by having an assessment. I don't know if I am in order or not.

VICE-SPEAKER BAILEY: You are not.

DR. FRASER: I am talking about the amendment to the amendment.

VICE-SPEAKER BAILEY: You are talking about whether to refer the whole thing to the committee or not.

DR. FRASER: I am talking about referring it to the committee.

As I said before, we shouldn't be pikers. We shouldn't lull ourselves into a sense of security and pass the buck. Let's face this head-on. This is a way we can do it—and again I am speaking against the referring—by voluntary assessment on an emergency basis. But, I can recognize the principle of turning this thing over to the grass roots and the county associations.

The formula that I gave you about the way it was done in Sacramento is a good way. I understand that Alameda-Contra Costa County may well be used to obtaining funds, but the point is I think we should take some action on this and not refer it back to the committee and let it lie dormant for six months.

. . . The question was called for. . . .

VICE-SPEAKER BAILEY: Is there any further discussion?

Is this on the subject of referring it back to the committee?

DR. THOMAS E. FARTHING (San Mateo County): It is, sir.

Mr. Speaker, I, perhaps, have waited too long, because I had a strong impulse to speak about this sooner, and now you want the question.

I am very glad this is a democratic organization, and I feel there are two principles involved herein.

I think Dr. Teall and others have very eloquently expressed the one that brings us back to the principle of liberty of the individual, and of the individual being given the privilege of deciding about his own philanthropies, and to whom or to what he wants to give his money.

The other, I think, is an angle of public relations, or favorable politics, if you want to call it that. I can't help but sympathize with our delegates whom we send back to the American Medical Association. They have to report such a low amount of money that we have contributed, as if that is all we have contributed. But, it is not all we have contributed. There is a tremendous bulk of contributions that have come from the members of the California Medical Association that have gone in a private way to private institutions, that somehow or another has not been publicized. Whether or not it should be publicized, I don't know.

But I have a feeling that somehow or other we ought to be able to point out that we are supporting medicine, we are supporting medical education in a big way.

This less than one dollar per member is a disgrace, of course. But, that is not the truth. It just so happens that that is one channel through which it has to be expressed, and it appears to be the truth.

Now, why can't we refer this to a committee and let them study some ways of bringing out to the public that we have contributed in large amounts on a private basis?

I am sure the staffs at the universities and all the other private medical institutions in this state could give you almost immediately the amounts of monies they have received through private contributions that have not been publicized.

I have the feeling that I don't want to vote on this issue right now as a delegate to this body, because I would also like to go back to my county society and give them the privilege of thinking about it a little bit.

Also, on the other hand, I feel like Dr. Jekyll and Mr. Hyde. I do not want to pass it off and lose the opportunity to make a favorable impression, perhaps politically or public relations-wise, if you want to call it that. Why can't we refer this to a committee and have them study some means of showing really how much money altogether we have contributed to medical education, including private contributions to private schools, not only those in the state, but those out of the state.

Therefore, I would like very much to favor that we refer this to the committee which Dr. Armstrong has so moved. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Doctor.

Gentlemen, we have taken a long time in debate of this one subject. We have a great many more resolutions. I will call to the attention of the House that if they want to talk about it the rest of the afternoon, they may. If anybody moves to close debate on this, to defer it takes a two-thirds majority to carry, and that takes precedence.

A MEMBER: I so move.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It is before the House, and it is not debatable. You understand very clearly, do you, if we close debate on it, it is referred to the committee, and we refer to the committee the main motion, the substitute motion, and everything else.

It takes a two-thirds vote.

This is not debatable. It is a motion to close debate on the question to defer.

Those in favor of closing debate will say "aye."

. . . The motion was put to a vote. . . .

VICE-SPEAKER BAILEY: The Chair is in doubt. We will have a show of hands.

. . . The vote was taken by a show of hands, and the motion was carried. . . .

VICE-SPEAKER BAILEY: The "ayes" have it. We have closed debate on the question of deferring.

A MEMBER: I rise to a point of order. Don't we have to vote now upon the question?

VICE-SPEAKER BAILEY: We vote now to refer. We have closed debate. We vote on whether it will be referred to a committee or not. We moved to close debate. We now move whether we shall refer it to committee, or not.

A MEMBER: A point of information. What is the earliest date to which the committee could refer back to this body?

VICE-SPEAKER BAILEY: The Interim Session is the earliest time.

A MEMBER: Mr. Speaker, a point of information. What is this for, to debate or what? A decision was just made on this and a vote was taken.

VICE-SPEAKER BAILEY: A vote has been taken to close debate.

DR. JOSEPH TELFORD (San Diego County): I move to suspend the rules. (Laughter.)

VICE-SPEAKER BAILEY: For what purpose do you move to suspend the rules?

DR. JOSEPH TELFORD: I move to suspend the rules to give to this body a solution to this problem that seems obvious to those on the floor.

VICE-SPEAKER BAILEY: Do you want to give an opinion on that, Mr. Legal Counsel?

MR. HOWARD HASSARD: You have just closed debate on a question that is before the House. You have to vote on the question that is before the House.

. . . The question was called for. . . .

MR. HOWARD HASSARD: Incidentally, I might add that the introduction of a resolution at this time is not in order, except under the emergency section, and would require a two-thirds vote to introduce an emergency resolution.

. . . The question was called for. . . .

VICE-SPEAKER BAILEY: I think you will have a chance to bring this up under New Business.

The question before the House is whether we refer to the committee or not.

A point of information, Dr. Ward?

DR. ROBERTSON WARD: Do we not have to set the dues at this meeting? We can't put it off until later.

VICE-SPEAKER BAILEY: They have been set, but under New Business we could reconsider. At the moment we are voting on referring this to the committee.

All in favor of referring this one section of the report to the committee will say "aye."

. . . The motion was put to a vote. . . .

VICE-SPEAKER BAILEY: We will ask for a show of hands, and the "ayes" are to refer to the committee. This requires a simple majority, you understand.

. . . The motion was put to a vote by a show of hands. . . .

VICE-SPEAKER BAILEY: We will have to count them. All those who want to refer to the committee will stand and be counted.

We are going back to the "ayes" again.

. . . A standing vote was taken. . . .

VICE-SPEAKER BAILEY: The "ayes" have it, 119 to 94. (Applause.)

Will you continue your report, Dr. Ward?

DR. ROBERTSON WARD: Mr. Speaker, I move the acceptance of my report in toto as amended. (Laughter.)

VICE-SPEAKER BAILEY: Yes, Dr. Ward. The motion to accept your report in toto as amended is before the House.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Those in favor of such acceptance will say "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: Next is the report of Reference Committee No. 4, Dr. Albert G. Miller, of San Mateo, chairman; Thomas A. LeValley and Dorothy Allen.

Dr. Miller!

REPORT OF REFERENCE COMMITTEE No. 4

DR. MILLER: Mr. Speaker, and members of the House of Delegates: Reference Committeee No. 4, composed of Dr. Dorothy Allen, of Alameda County, Dr. Thomas A. Le Valley, of Los Angeles County, and Dr. Albert G. Miller, of San Mateo County, chairman. offers the following "written report dealing with and making recommendations on all matters submitted to it" in accordance with Chapter V, Section 9 of the California Medical Association By-Laws.

Will you please turn to page 1 of the proposed Constitution and By-Laws resolutions before you. The first one was submitted by Dr. S. J. Shipman of San Francisco. As you see, it is a constitutional amendment, and as such must lie over until the next session for consideration as specified in Article 8, Section 3 of the Constitution.

The next amendment was introduced by A. T. Hinman, M.D., of San Francisco, and it touches on the often-debated subject of the Interim Session of our House of Delegates. This committee thanks the many members who appeared with us to give us their thoughts. By their interest and the show of hands at the first session of the House, we are sure that you want something presented so that a decision will be available to you.

Unfortunately, Dr. Kirchner's substitute resolution presented on Sunday was not mimeographed. However, we felt that with Dr. Hinman's resolution as printed, the salient features of Dr. Kirchner's substitute resolution were included.

During the discussion of the By-Law amendments relating to the Interim Session, it was proposed to our committee that the emergency clause of the By-Laws should be eliminated, that in the future each session, whether annual or interim, should stand on its own feet without carrying over business unless the House so desires and the decision for each year as to whether or not to hold an Interim Session be made by the end of the first day of the Annual Session. We understand that such proposals will be presented to the House in the form of By-Law amendments at the next session.

We therefore propose that the resolution introduced by Dr. Hinman calling for a By-Law amendment changing the methods by which an Interim Session is held, be amended by adding at the outset of the resolution an effective date for the By-Law amendment, such date to be January 1, 1954. As so amended, the introductory part of the resolution reads, "Therefore, be it resolved that effective January 1, 1954, the By-Laws . . . et cetera, et cetera."

The remainder of the resolution setting forth the revised By-Law remains unchanged. The only effect of the committee's amendment is to clarify the situation with respect to the 1953 Interim Session.

The committee at this time recommends that this resolution as amended do pass.

Mr. Speaker, I move the adoption of this portion of the report.

VICE-SPEAKER BAILEY: For the information of the House, that has the effect of keeping the Interim Session in for one more time.

DR. MILLER: That is right. In order to bring these two resolutions to you for your decision, we felt it was not changing the intent to add this amendment, and we could, therefore, deliver it to you in that form.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded that this portion of the report do pass. Is there any discussion?

Those in favor will say "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. MILLER: With your permission, we would like to change the order of the resolutions as printed and consider the resolution of Dr. S. J. Shipman on page 3 of your mimeographed copy. This deals with the elimination of the Standing Committee on Medical Defense, which has been obsolete for many years. Your Reference Committee feels that these deletions should be made and recommends that the resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Is there any discussion?

Those in favor of the do pass say "aye."

. . . The motion was put to a vote and it was carried. . . .

DR. MILLER: To go back now, please, to page 2 of your copy and the resolution of Dr. Gibbons, of San Francisco.

This pertains to the Medical Services Commission. As you know, this commission was set up at the Annual Session of the California Medical Association in 1952 and its structure and functions were spelled out in specific detail.

The resolution would place the commission under the chapter dealing with committees of the California Medical Association. The only other commissions, namely, Blood Bank Commission and Cancer Commission, are not included or designated as committees and are not named in the By-Laws.

If the Medical Services Commission is to be placed in the By-Laws, it would seem that the two present commissions should be on a similar status. We would recommend that further study be given to the advisability of including these commissions in the By-Laws.

In the case of the Medical Services Commission, it

is our opinion that this commission is so new and its potential for good is so great, that in this stage of its existence it should be allowed the flexibility which it can obtain through direct contact with the House of Delegates and the Council, rather than being handicapped by the restrictive language of a By-Law.

The committee therefore recommends a do not pass.

Mr. Speaker, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: The motion is seconded, do not pass. That will kill this resolution.

Is there any discussion on the question?

Those in favor of killing the resolution by saying do not pass will vote "aye."

. . . The motion was put to a vote and it was carried. . . .

VICE-SPEAKER BAILEY: So ordered.

DR. MILLER: The last resolution on page 3 of your printed copy presented by Dr. J. M. de los Reyes, of Los Angeles, deals with citizenship. The committee feels that the motive behind the resolution is excellent and timely.

At this time the component county societies are still completely autonomous in this matter. As was expressed in the resolution, Los Angeles County for example, already has a definite statement to the effect that their members must be citizens.

In view of opinions expressed by those appearing before the committee, it was felt that the application by the C.M.A. of the requirement to all classes of membership might well be too inclusive. We believe that all active members, those who have the privilege to vote and hold office, should certainly be citizens. To deny all classes of membership to non-citizens may impose a hardship. It could interfere with their hospital affiliations or issuance of professional liability insurance, as five years are required for full citizenship. Citizenship is not required for state licensure by the State Board of Medical Examiners.

Because the changing of the words "all classes" to "active class" would change the intent of the resolution as per our advice from legal counsel, the committee is obliged to recommend a do not pass at this time.

Therefore, Mr. Speaker, we recommend a do not pass, and I move the adoption of this section of the report.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: Once again we have a motion, do not pass, which would defeat the resolution.

Is there any discussion?

DR. J. M. DE LOS REYES (Los Angeles): Mr. Speaker and Fellows: I spoke to our Legal Counsel on the committee, and I am very willing to abide by their decision to change that "all classes" to "active membership," and bring it up before the Interim Session. Thank you.

. . . The question was called for. . . .

VICE-SPEAKER BAILEY: Dr. Askey!

DR. E. VINCENT ASKEY (Los Angeles): A point of order. I hate to disagree with our learned counsel, but if you do not wish to accept all of it, you can accept any part of that which has been suggested.

For instance, if they recommended that the dues should be $5.00, you could make it anything from one to five, but you could not exceed it.

Therefore, in my opinion, sir, it would be all right to reduce this from "all members." to "active members," because that is less than they asked for, and does not exceed. Therefore, the intent of the resolution would not be interfered with.

DR. A. G. MILLER (San Mateo): Then, if we would take Dr. Askey's interpretation of that, I would like to ask Legal Counsel if by the initial resolution being asked to go in a certain section and chapter, whether that would change the intent; what would actually happen if we took that interpretation? I would like to ask Legal Counsel that question.

VICE-SPEAKER BAILEY: Legal Counsel will speak.

MR. HOWARD HASSARD: I regret very much the opinion I have to state, but the By-Laws require that any amendment proposed to the By-Laws must lie on the table for twenty-four hours.

It is, of course, possible to take an amendment that is lying on the table and report it back with minor changes that do not affect the substance.

I agree with Dr. Askey's general statement, but in this particular instance, to shift from membership as such to "active membership," the By-Law amendment has to be changed from an amendment adding a new section to an amendment amending an existing section, and I am afraid that is a substantive change that would defeat the By-Law requirement of the twenty-four-hour wait.

I am sorry.

DR. E. VINCENT ASKEY: I defer, sir.

VICE-SPEAKER BAILEY: In this case, the delay hasn't been quite long enough. (Laughter.)

We will go back to the subject of the question on whether to defeat this resolution by voting "aye" and do not pass.

Is there any further discussion?

Dr. Parker!

DR. LEON PARKER (San Francisco): The gentleman who introduced the resolution told you that he was not a natural born citizen of the United States. I am. In fact, I was so naturally born that early morning the doctor didn't get there, and I slept in. (Laughter.)

I don't know the intent of this resolution. I can't see it. I don't want to be in the position that when I go back to the grass roots in San Francisco to have to tell those interns—fifty per cent of the interns in the common man's hospital in San Francisco. have been foreign in the last two years—that I can't take their application into the county medical society.

I would believe that organized medicine's first job is to educate, and I would believe if there be any undesirable citizens, or people that may not have been citizens among those foreign interns, that they ought to be educated in the medical society.

I think this business of creating a class of foreigners that can't be in organized medicine, is giving ammunition to our worst enemies, both within medicine and without. (Applause.)

VICE-SPEAKER BAILEY: Thank you, Dr. Parker.

The "ayes" votes will defeat the resolution. All those in favor of not passing the resolution will say "aye."

. . . The motion was put to a vote and it was defeated. . . .

VICE-SPEAKER BAILEY: Continue, Dr. Miller.

DR. MILLER: In conclusion, Mr. Speaker, I move the adoption of the report as a whole.

VICE-SPEAKER BAILEY: As amended?

DR. MILLER: Yes, as amended as a whole.

. . . The motion was seconded. . . .

VICE-SPEAKER BAILEY: It has been moved and seconded. All those in favor signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: I should like to make an announcement before we go on with Reference Committee No. 3.

Dr. Ivan Heron was elected chairman of the Board of the American Academy of General Practice at its national convention in St. Louis in March. I think that is nice recognition for one of our members. (Applause.)

DR. BURT DAVIS (Santa Clara County): Mr. Speaker, I move to reconsider the matter of dues. (Laughter.)

SPEAKER CHARNOCK: It is lost for want of a second.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: I am sure you can take this up under New Business.

A MEMBER: A point of order, Mr. Speaker. There was a second that wasn't heard.

SPEAKER CHARNOCK: All right. I will take that, then. I did not hear the second.

It has been moved and seconded that we reconsider the question of the dues.

Is that your motion?

DR. DAVIS: Yes, sir.

SPEAKER CHARNOCK: It has been seconded. Is there any discussion on the reconsideration of the dues?

. . . The question was called for. . . .

SPEAKER CHARNOCK: It has been moved and seconded we reconsider the question of the amount, I take it, of the dues.

Those who are in favor will signify by saying "aye."

. . . The motion was put to a vote and it was lost. . . .

SPEAKER CHARNOCK: The motion is lost.

At this time we will have the report of Reference Committee No. 3. Dr. Edward C. Rosenow, Jr., chairman, reporting.

REPORT OF REFERENCE COMMITTEE No. 3

DR. ROSENOW: While they are passing these reports out, I won't bring up anything important until everyone has a copy of this very excellent report. (Laughter.)

At this time I would like to thank the two other members of the committee, Dr. Helen B. Weyrauch, of San Francisco, and Dr. Carl M. Hadley, of San Bernardino County.

The thought that kept recurring to us on this reference committee was that whoever is introducing a resolution might reconsider eliminating about half or all of the whereases and the resolves. In fact, occasionally we had the thought you might not even introduce one at all. (Laughter and applause.)

Before we give this report, I would like to remind you all that whenever possible action is taken, that there is always set up an equal and sometimes even greater amount of reaction. So, I am sure of only one thing from listening to the comments of people who were kind enough and willing enough to give the time to come up and give us their ideas, that at least there will be some people here who are not entirely unfavorable to the Reference Committee's report. Repetition won't enter into it at all.

Do you all have copies now? We can ease into this gradually. The first one or two aren't too bad.

Incidentally, while you are getting those, I might show you these, which are only two of a large number of newspaper clippings that we had at our disposal, and that helped us make some of the decisions we made.

One of them refers to one of the resolutions which I will come to later. The other is about one of the resolutions, in which the "whereas" says that the public is "confused, irritated, and critical of the blood bank program."

This is a telegram from a worker at one of our industrial plants who says:

"As a ten-year man I protest the resolution that a charge be made for the blood donated by the employees of this company blood bank to the Red Cross for the use of these employees and members of their families. I suggest revision of the wording of the resolution."

We have already told him we have reworded the resolution, so I am sure he is no longer "confused, irritated or critical." (Laughter.)

Now, to get to Resolution No. 1. This is a Council-introduced resolution by Dr. Sidney J. Shipman. You all have it in front of you.

Because of some misunderstandings regarding the exact wording of this resolution as presented by the

Council, the committee recommends a substitute resolution reading as follows:

The reason for the misunderstanding and confusion and the rewriting is that the Pathology Section took exception to some of the wording, and this is not essentially to change the meaning of the original resolution, and is as follows:

WHEREAS, It is recognized that well-trained and qualified people with special skills, including those of Ph.D. level, work with doctors of medicine; and

WHEREAS, These people with special skills, regardless of proficiency in a particular field, are, nevertheless, not trained in the over-all skills embraced within medicine and surgery, now, therefore, be it

Resolved, That the medical profession recognize the limit of these special skills but understand the desirability of using such people to measure body functions, by physical or other means, under direction of doctors of medicine; and be it further

Resolved, That in no instance, except where specifically prescribed by law, should these people be permitted to make diagnoses or render diagnoses to doctors of medicine, hospitals, clinics, et cetera; and be it further

Resolved, That such persons with special skills shall not prescribe for the patient, regardless of training but that such prescribing shall be done only by medical doctors and that the care of the people receiving these medicines be under the direction and immediate care of the doctor of medicine so prescribing.

Your committee recommends that this substitute resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this portion of the report be accepted. Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those who are in favor of accepting this portion of the report will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

Proceed.

DR. ROSENOW: Resolution No. 2 was introduced by Sidney J. Shipman for the Council.

The purpose of this resolution is to provide better coordination and cooperation between the mentioned agencies and your committee recommends do pass.

For your information, these agencies are the Hospital Service of California and the Hospital Service of Southern California, and your committee recommends a do pass.

Mr. Speaker, I move the adoption of this portion of the report.

SPEAKER CHARNOCK: It has been moved that we accept this section of the report. Is there a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: Is there any question? Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: Resolution No. 3 introduced by Justin J. Stein of Los Angeles.

Your committee feels that this resolution would strengthen the A.M.A.'s action in having Congress study Draft Law 779 and would tend to have Congress adopt the recommendations as suggested by the A.M.A. We, therefore, recommend that this resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this portion of the report be adopted. Is there any question?

Those who are in favor of adopting this section of the report will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: Resolution No. 4 introduced by Justin J. Stein of Los Angeles.

Parenthetically, I might say we arrived at the conclusion you have before you a rather detailed discussion with our representatives in the public relations field, and at the legislative level in Sacramento. And on their strong urgings, we have adopted this suggestion.

The committee recognizes the importance of civil defense and the intent of the resolution. We believe, however, that so far as the doctors are concerned, they would be ready and willing at all times to take whatever part was deemed necessary in civil defense. It would appear at this time that the public would be better served if the appropriation for civil defense were left to the Legislature. We, therefore, recommend do not pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this portion of the report be adopted.

Is there any question?

We are voting it in the affirmative which will kill this resolution.

Those who are in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: This portion is accepted.

DR. ROSENOW: Resolution No. 5 introduced by Justin J. Stein of Los Angeles.

We recommend that this resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that Resolution No. 5 be accepted.

. . . There were calls of "what is it about?" . . .

SPEAKER CHARNOCK: Will you read Resolution No. 5, the emergency resolution introduced by Dr. Justin Stein?

DR. ROSENOW:

WHEREAS, Physicians in the Armed Forces have frequently been used for non-medical duties; and

WHEREAS, The ratio of physicians in the armed forces to personnel is too great; now, therefore, be it

Resolved, That the California Medical Association request of the Secretary of Defense that better utilization of physicians in the armed forces be carried out and that there be a reduction in the amount of non-military medical care and that greater use be made of contract physicians and of existing private medical facilities.

SPEAKER CHARNOCK: Is there any further discussion on this section of the report.

Those who are in favor of accepting this section of the report will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: Resolution No. 7.

DR. ROSENOW: This was introduced by J. M. de los Reyes of Los Angeles.

The need for a straightforward investigation of the social security program is particularly appropriate at this time. Congressmen in the local area have shown interest in such an investigation. However, because the second paragraph adds nothing to the intent of the resolution, we move the amendment of the resolution by deletion of this paragraph and we recommend the adoption of the amended resolution.

Parenthetically, this tends to be a little "inflammatory." That was why we suggested to Joe that he shorten the whereases.

We move the amended resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report. Is there any discussion?

Those who are in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: Resolution No. 8 was introduced by Lyle G. Craig of Los Angeles.

It was introduced as an emergency and refers to the marked shortage of interns available for private hospitals due, in part, at least, to the increasing demands of public, military and veterans' hospitals.

The main principle of this resolution is to keep the door open for provision of good internships in all good hospitals whether private or public, "teaching" or "non-teaching." The resolution points out the limitations and restrictions placed on many hospitals by the Advisory Committee on Internships of the Council on Medical Education and Hospitals of the A.M.A.

Your committee recommends that this resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report. Is there any discussion?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

We move now to Resolution No. 11.

DR. ROSENOW: Thank you very much for your cooperation. It is very gratifying.

Resolution No. 11.

Because of the rapid growth of certain closed panel plans for providing prepaid medical care, along lines which are not in the best interests of the public, this resolution is particularly timely and we recommend do pass.

Mr. Speaker, I move the adoption of this portion of the report.

SPEAKER CHARNOCK: Just one moment, if you please. Legal Counsel has offered an objection.

MR. HOWARD HASSARD: Mr. Speaker, as the resolution is printed on page 6 of the resolutions, it contains a paragraph that I am certain was not introduced.

DR. ROSENOW: You are correct. I am very sorry. This original resolution was printed up before the Reference Committee met. I proofread these things about five times, and I missed that.

The last resolve was not presented in the original part of the resolution. If you will look at the bottom of page 6—

SPEAKER CHARNOCK: Will you please read that?

DR. ROSENOW: It reads, "Resolved, That it is the expressed view of the House of Delegates of the California Medical Association that any member of this Association who participates or practices as a member of a closed panel system in a prepaid medical care plan, such as is hereinabove described, is not acting in a manner to accord with the letter or the spirit of the Principles of Medical Ethics of the American Medical Association."

That was not part of the resolution.

SPEAKER CHARNOCK: Do I hear a second to this?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and sec-

onded that this resolution as amended be accepted. Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those who are in favor of accepting this portion of the report, Resolution No. 11, will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is passed.

DR. ROSENOW: No. 12 refers to the blood procurement program, and we would like to introduce our substitute for this resolution.

This was introduced by Paul Morton of Santa Clara County.

The Reference Committee feels that the intent of the resolution is fundamental but because the wording in certain portions is confusing, we are submitting a substitute resolution as follows:

WHEREAS, The ready availability of blood and blood derivatives has become a vital necessity to modern medical practice in both the civilian and military populations and therefore a matter of highest concern to the physicians; and

WHEREAS, The independent operation of blood banks of all degrees of excellence throughout the nation by many different agencies, some lay and some medical, has resulted in some confusion and friction between blood banks and organizations operating blood banks; and

WHEREAS, The general public is confused, irritated and critical of the varying methods of operation among blood banks in the same or contiguous areas; and

WHEREAS, The professional aspects of the drawing of blood, its fractionation, and its use as a therapeutic tool, must be under medical control, and such medical control on a national scale logically should be a function of the American Medical Association; and

WHEREAS, The American Red Cross has already been designated by the government as the official blood recruitment and distributing agency for the military services; and

WHEREAS, The present American Red Cross program of so-called "free" blood without requirement for replacement has made collection of adequate supplies for civilian use difficult, has been a tremendous drain on Red Cross funds which might better be devoted to purposes more consistent with Red Cross functions, is inaccurate to the extent that blood is not free but is paid for by the community at large in contributions and by the government through tax revenues; now, therefore, be it

Resolved, That the delegates to the American Medical Association from the California Medical Association be instructed to reintroduce and support in the House of Delegates of the American Medical Association appropriate resolutions pressing for a coordinated national blood bank program jointly operated by the American Medical Association, the American National Red Cross and with the cooperation of other qualified and interested organizations on the following basis:

1. Medical aspects of blood banking shall be under the exclusive control of the medical profession.

2. Business administration, donor recruitment, stockpiling for civil defense and disaster relief, allocation of supplies to meet military needs, and public relations shall be matters of joint concern.

The supply of blood shall be maintained on a replacement basis.

4. The national blood bank program shall be a financially self-supporting but non-profit arrangement operated in the national interest with the sole aim of promoting the widest availability of safe, usable blood and its derivatives.

We move the adoption of the substitute resolution, that it do pass.

Mr. Chairman, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this substitute resolution be accepted. Is there any discussion?

Those who are in favor of accepting this portion of the report signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

Resolution No. 14.

DR. ROSENOW: Resolution No. 14. It was introduced as an emergency resolution by Dr. Hinman of San Francisco, and is found on page 9.

Because of the importance of this matter and because the committee feels that this definition as offered in the resolution is somewhat involved and too detailed in its wording, we offer a substitute resolution as follows:

Parenthetically, I may say here since we wrote this, our Reference Committee has met again on this and find it more and more difficult to define this particular phrase, and I think we should all remember that as we define this particular principle, that the more definite the definition is, the more the tendency is to, in some way, restrict the free choice of physician. Therefore, we have added two words, which I will tell you when we get to them.

Resolved, That the definition of the free choice of physicians shall be: "The patient should have absolute freedom to choose a legally qualified physician or surgeon from all of those qualified to practice who are willing to give service under the," and here we want to insert, "lawful and ethical conditions established."

We move the adoption of this substitute resolution. We recommend a do pass.

Mr. Speaker, I recommend the adoption of this section of the report.

SPEAKER CHARNOCK: Do I hear a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: This is open for discussion.

I may add before any discussion starts, I take it that this change that you have made is just the first resolve? The others are as in the original?

DR. ROSENOW: No, this is the whole thing.

SPEAKER CHARNOCK: The whole thing.

Yes, Dr. Parker.

DR. LEON PARKER: Mr. Chairman, I wish to make a substitute resolution. The whereases in the old resolution would remain as they are.

The definition of "free choice of physician," as was given by your committee with those two words added, would remain as they are. I will, therefore, read the resolution as by the substitute:

Resolved, That the definition of "free choice of physician" shall be: The patient should have absolute freedom to choose a legally qualified physician or surgeon from all of those qualified to practice who are willing to give service under the legal and ethical—as I got your wording—conditions established.

That would be the first resolve.

The second resolve would be:

That the selection of a physician from a closed panel group at the time of purchase of a prepayment plan before the need for treatment of illness or injury does not fulfill the requirement of this definition. And, be it further

Resolved, That this House of Delegates approve the above definition of "free choice of physician" as the only one acceptable in the California Medical Association; and be it further

Resolved, That the Council of the California Medical Association is hereby instructed not to permit any California Medical Association approval, implied or otherwise, of any individual, group, or corporation, dealing in medical services or insurance unless free choice of physician is exercised according to this definition; and be it further

Resolved, That the Council of the California Medical Association is hereby further instructed to use all reasonable effort to inform and instruct the public in the basic tenets of this resolution.

SPEAKER CHARNOCK: Is there a second to this amendment by substitution?

. . . The motion was seconded, and the question was called for. . .

SPEAKER CHARNOCK: Is there any discussion on this?

Dr. Dozier!

Dr. Dozier, you are to discuss this amendment by substitution?

DR. DAVE F. DOZIER (Sacramento County): I should like to ask the privilege, Mr. Chairman, to introduce a substitute for the amendment.

. . . The question was called for. . . .

SPEAKER CHARNOCK: Well, this is a secondary amendment already. The Reference Committee has amended it once. This one is the second one. So, that would be the third, and not allowed.

DR. DAVE F. DOZIER: May I speak to it?

SPEAKER CHARNOCK: You may speak to the amendment by substitution which has just been presented.

DR. DAVE F. DOZIER: Gentlemen, I feel we have two things involved here; one, a matter of principle, and I think we are thoroughly and completely united on the principle of free choice of physician.

The second thing we have is as indicated in the committee's report, a matter of definition. How do we define "free choice of physician"?

That involves a rather profound medical and legal thought. Certainly any definition of "free choice of physician" that we will be asked to furnish must be a good one, and it must have no loopholes in it.

I feel that if this House can at this time simply go on record as being unanimously in favor of the principle of "free choice of physician," that the exact definition which can then be presented to the public, and which can then be presented to our members, should be left for further study.

I don't think that we as a deliberative body are ready at this moment to write out a definition which is going to be wholly satisfactory from the standpoint of either our public relations, our legal department, or from the members themselves.

We don't want to get into a bind with resolutions on top of resolutions here. If it were to occur that the amendment as offered would be defeated and that the recommendation of the committee then come up for amendment again, I would like to offer a resolution stating that we affirm—take that part of the resolution and affirm our endorsement — our complete endorsement of the principle of free choice of physician, and that then the definition be left to the Medical Services Commission to be reported later in such a manner as can be best attained by consultation with Mr. Hassard, and whoever else is interested.

SPEAKER CHARNOCK: Dr. Dozier, would you like to move to refer this entire section of the report to the Medical Services Committee? That is in order.

DR. DOZIER: Mr. Speaker, I think that would miss one point from the standpoint of publicity and public relations today. Certainly we ought to go out of here waving the banner of "free choice of physician."

If we refer the whole thing, that thing is lost as far as publicity is concerned.

I do think we should be able to work out the thing here without spending too much time on it, whereby we can stick by that principle and let the legalists furbish it up as to the exact definition.

DR. LEON PARKER (San Francisco County): Mr. Chairman.

SPEAKER CHARNOCK: Dr. Leon Parker.

DR. LEON PARKER: This resolution was not intended as an emergency. It was brought here, not to be an emergency, and the people that worked on it particularly didn't ask that it be an emergency, but

not knowing whether we are going to have an Interim Session or not, it got pushed in here.

Therefore, I am going to move to refer this to Committee No. 3, to be reported back to us at the Interim Session.

SPEAKER CHARNOCK: Is there a second to that?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this section of the report be referred back to Reference Committee No. 3, that it be reported at the Interim Session.

Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: There being no discussion, all those who are in favor of referring this section of the report will signify by saying "aye."

. . . The motion was put to a vote. . . .

SPEAKER CHARNOCK: The Chair is in doubt.

Those who are in favor of referring this report will please raise their hands.

. . . The vote was taken by a show of hands, and it was carried. . . .

SPEAKER CHARNOCK: The "ayes" have it, and it has been referred back to Reference Committee No. 3.

Will you proceed? No. 15.

DR. ROSENOW: I might say that Reference Committee No. 3 would be happy to have any of you write a definition of "free choice of physician," to us between now and the Interim Session, so we can be helped in this rather complicated problem.

Next is No. 15.

This resolution refers to better cooperation between the professions of osteopathy and medicine.

This resolution, introduced at the request of the C.M.A. Committee studying the relationship of the two professions, would reaffirm last year's resolution and help to hasten the time of greater cooperation between the two professions. Your committee feels that such cooperation is important in the public interest and recommends that this resolution do pass.

Mr. Chairman, I move the adoption of this section of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this section of the report be adopted. Is there any discussion?

Those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is adopted.

DR. ROSENOW: Resolutions Nos. 16 and 20, introduced by L. Henry Garland of San Francisco and Robertson Ward of San Francisco, respectively.

Inasmuch as resolutions 16 and 20 both refer to the care of veterans and particularly with reference to non-service-connected disabilities, the committee recognizes the need for a change of policy regarding this problem and submits a substitute resolution for both of these resolutions, as follows:

WHEREAS, The highest quality of medical care and rehabilitation of service-connected disabilities in veterans is an undisputed obligation of the Federal Government and a basic requirement of long-term defense; and

WHEREAS, This should be the first responsibility of the Veterans Administration medical program; and

WHEREAS, In most communities local health facilities are adequate for treatment and rehabilitation of non-service-connected disabilities; and

WHEREAS, Economy is usually given as the excuse for the Veterans Administration not affording physicians in the home town program with the veterans' service medical records or records of treatment of the Veterans Administration or otherwise; and the lack of such records deters the best medical care and rehabilitation of the veteran as well as working a hardship on the physician; and

WHEREAS, The present Veterans Administration laws state that non-service-connected illnesses will be cared for by the Veterans Administration "if the individual signs an oath that he is unable to pay for private medical care"; and

WHEREAS, Such violations could be eliminated if a more accurate definition of eligible beneficiaries were defined in the law; now, therefore, be it

Resolved, That this House of Delegates instruct our Delegates to the American Medical Association to introduce and sponsor resolutions that will set up a program of study which will aid Congress to:

1. Continue the policy of the A.M.A. of advocating the best medical care and rehabilitation of service-connected disabilities.

2. Eliminate false economy measures in home town treatment programs and furnish the home town physician with military and Veterans Administration medical records.

3. Eliminate waste in the treatment of non-service-connected disabilities, by defining a "beneficiary" sufficiently well so that the offenders could be apprehended in order to prevent the expansion of facilities for care of non-service-connected disabilities.

4. Consider the eventual elimination of the use of Veterans Administration hospitals as domiciliary establishments so prone to work against rehabilitation.

5. Exercise all further economy possible with the Veterans Administration to prevent the expansion of facilities for care of non-service-connected disabilities.

Your committee recommends the substitute resolution do pass.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this substitute resolution will take the place of Resolutions 16 and 20.

Is Legal Counsel in agreement? Is that satisfactory?

MR. HOWARD HASSARD: Yes.

SPEAKER CHARNOCK: Is there any discussion?

... The question was called for....

SPEAKER CHARNOCK: Those in favor of accepting this portion of the report will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: The next resolution to be considered is No. 18. It is an emergency resolution. It refers to the publicity regarding the American College of Surgeons and one of its spokesmen. It is on page 12 of your original resolutions, and your committee recommends that the following paragraph be added to the resolution as submitted:

Be it further

Resolved, That the American College of Surgeons and its spokesmen be reminded, in the public interest, that there already exist adequate methods for correction of such alleged abuses through the constituted channels of the American Medical Association and its component societies.

Incidentally, I would like to point out this newspaper clipping refers to a resolution that has been adopted by the Illinois State Medical Society House of Delegates which has two points to it:

One, inquiry and disciplinary action against Dr. Hawley by the American Medical Association, and two, remedial measures by the American Medical Association against the American College of Surgeons.

So, we are not alone in this.

We recommend this amended resolution by the addition of the second resolve do pass.

Mr. Speaker, I move the adoption of this portion of the report.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that the adoption of this section of the report as amended be accepted.

Is there any discussion?

Those in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: The last resolution is No. 21, introduced by Albert G. Miller of San Mateo.

This refers to the so-called Bricker resolution.

Your committee agrees completely with the resolution as presented but would like to make a slight change so that the last two paragraphs now read:

Resolved, That our Delegates to the A.M.A. alert the A.M.A. House of Delegates to this particular problem: and be it further

Resolved, Specificially that we and our Delegates to the A.M.A. heartily endorse and urge every member of Congress to adopt Senate Joint Resolution No. 1, the Bricker Resolution.

Your committee recommends that this amended resolution do pass.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that we adopt this section of the report. Is there any discussion?

... The question was called for....

SPEAKER CHARNOCK: Those who are in favor of accepting this section of the report will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

DR. ROSENOW: Mr. Speaker, I move the adoption of the committee's report as a whole as amended.

... The motion was seconded....

SPEAKER CHARNOCK: It has been moved and seconded that the report of Reference Committee No. 3 as amended be accepted. Is there any discussion?

... The question was called for....

SPEAKER CHARNOCK: Those who are in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It is accepted.

We wish to thank Dr. Rosenow, Dr. Helen Weyrauch and Dr. Carl Hadley for their work on Reference Committee No. 3.

DR. ROSENOW: I want to make one announcement, that there are five or six resolutions left over to be acted upon at the Interim Session.

One of the original purposes of having an Interim Session is to have more time to study the resolutions. I hope all of you will read the resolutions we have not presented today, and will feel very free to write the committee about any further changes you would like. (Applause.)

SPEAKER CHARNOCK: Thank you, Dr. Rosenow, and your committee.

The next order of business is the report of Reference Committee on C.P.S. Business. Dr. Thomas N. Foster of Santa Clara, chairman.

REPORT OF REFERENCE COMMITTEE ON C.P.S. BUSINESS

DR. FOSTER: Mr. Speaker, members of the House: Your C.P.S. Reference Committee, composed of Drs. Norton Donaldson, Paul Foster, and myself, has met and considered the items of business referred to it. They were:

1. The report of Reference Committee No. 1, with proposed amendment by Dr. Samuel R. Sherman, of San Francisco.

2. Resolution introduced by Dr. Allen T. Hinman, of San Francisco.

At the request of Dr. Sherman, reference to the cost of living index in his amendment was deleted, since this was but one of several factors involved in fee list revisions. Dr. Sherman's amendment now reads:

"That at any place in the C.M.A.-C.P.S. Study Committee Report where reference is made to a fee schedule or fee list, it be understood that such fee schedule or fee list shall be subject to review and revision at least every two years, using the same mechanism as provided for in the original report."

Mr. Speaker, I move the adoption of this portion of the report.

SPEAKER CHARNOCK: Do I hear a second?

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded we adopt this portion of the C.P.S. Reference Committee report. Is there any discussion?

Dr. Julius Kahn, of Los Angeles County!

DR. JULIUS KAHN (Los Angeles County): I just want to ask a question. Does this report recommend the publication of a fee list, fee schedule?

DR. FOSTER: I think that is premature, isn't it, Doctor? We haven't got to that portion of the report.

DR. KAHN: But it does—

DR. FOSTER: We are talking now about Dr. Sherman's amendment that if a fee list should be undertaken, it would be revised at least every two years. It doesn't say a fee list will or must be undertaken.

DR. KAHN: Thank you.

SPEAKER CHARNOCK: Dr. Kahn, we just haven't gotten that far along yet.

Is there any discussion on this section of the report?

Those who are in favor of accepting this section of the report will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. FOSTER: Your C.P.S. Reference Committee, like Reference Committee No. 1, is also impressed by the very thorough investigation of the problems of health insurance and the dynamic new concept evolved by the C.M.A.-C.P.S. Study Committee. The medical profession and the public have been well served by the physicians on this committee. To our knowledge, no group of physicians in the history of medicine has so intensively undertaken to devote their time, effort and thought toward the equitable distribution of medical care. We believe this is concrete evidence of the desire of the profession that medical economics advance in step with medical science.

The committee meeting was exceptionally well attended. Present were members of the C.M.A.-C.P.S. Study Committee and the Medical Services Commission. Present also—and this, we believe, is of particular import — were many Delegates whose component societies have been actively investigating the practical application of the new principles.

There has been much progress in the implementation of these new concepts. In the few months which have elapsed since the December Interim meeting when the C.M.A.-C.P.S. Study Committee report was first offered to the House of Delegates, countless sessions have been held by the county societies, first to acquaint the members with the philosophy of the report, then to consider each step in its application as it relates to the local situation.

Several counties already have sufficiently crystallized the information gained through their investigations so that they are approaching the inauguration of a pilot basis, so that as test data is obtained, other societies will benefit by the experience.

At the completion of full discussion, and the discussion was very full, of all points of view, it was the unanimous opinion of all delegates in attendance at the hearing that the Study Committee recommendations should be submitted to the Medical Services Commission for continuing active study, and that pilot plans should be encouraged in order that practical experience in the operation of such a program may be gained. We believe that this course of action is the best assurance that the public's interests will be best served.

This committee is in full accord with the recommendations of Reference Committee No. 1 as amended.

Mr. Speaker, I move the adoption of this portion of the report.

. . . The motion was seconded. . .

SPEAKER CHARNOCK: It has been moved and seconded that this portion of the report be accepted. Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those who are in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. FOSTER: The other resolution referred to the C.P.S. Reference Committee was that introduced by Dr. Allen T. Hinman of San Francisco.

With the approval of Dr. Hinman, minor changes in wording were made which did not alter the intent of the resolution. The resolution now reads:

WHEREAS, Current changes in the economics of the practice of medicine are fully recognized: and

WHEREAS, It is the responsibility of the medical profession to take the leadership in the formulation of standards of health insurance; it is hereby

Resolved, That because of the wealth of material and considered conclusions presented, the C.M.A.-C.P.S. Study Committee Report should be kept fresh and vital in our minds as a source of information and as a guide in our continuing efforts to develop

sound and equitable means of insurance against the cost of illness; and

That we reaffirm the objective of C.P.S. to serve as a means for developing better methods of prepaid health insurance; and

That in order to obviate the necessity of any unsavory police system among us and to minimize the dissipation of insurance benefits through misuse and over-use, we should broaden the accepted principle of patient participation in meeting the cost of illness with co-insurance, particularly on a percentage basis; and

That this House of Delegates urge our Council, the Board of Trustees of California Physicians' Service, and the Medical Services Commission to use their good offices to foster and to continue the work which the C.M.A.-C.P.S. Study Committee has engendered.

Mr. Speaker, I move the adoption of this portion of the report as amended.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that this section of the report be adopted as amended.

Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those who are in favor of adopting this section of the report will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

DR. FOSTER: Mr. Speaker, I move the adoption of the report as a whole.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we adopt the report as a whole. Is there any discussion?

Those who are in favor of accepting this report as a whole will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted.

We wish to express our thanks to Dr. Foster, Dr. Donaldson, and Dr. Paul Foster for their work on this committee. (Applause.)

The next order of business is unfinished business. Mr. Secretary?

SECRETARY DANIELS: There is none.

SPEAKER CHARNOCK: The Secretary announces there is no unfinished business.

The next order of business is new business.

During this time, if anybody would like to put up a resolution that would be carried by two-thirds, you have that power.

DR. JOSEPH W. TELFORD (San Diego County): Mr. Chairman.

SPEAKER CHARNOCK: Yes.

DR. TELFORD: This is a new resolution that I believe should not be an emergency.

SPEAKER CHARNOCK: If it is not an emergency, we can't accept it.

DR. TELFORD: All right, I will declare it an emergency.

WHEREAS, It is obvious to all members of the California Medical Association that there is a definite need for funds to support medical schools who do not receive adequate funds from tax sources; and

WHEREAS, It is also obvious there is a very definite urgency that we meet without delay this obligation on the part of organized medicine to meet this financial need of our medical schools; and

WHEREAS, California medicine is dedicated to the principles of free enterprise, the recognition of the morality of its membership and the abhorrence of compulsion; and

WHEREAS, Assessment will not only interfere with our principles, but may well upset the previously well-established programs of the alumni organizations of the medical schools; and

WHEREAS, We are exceedingly anxious to implement the voluntary contributions to medical education, we believe that by the reaffirmation of our principles that we may very well actually achieve a more productive fund in years to come; now, therefore, be it

Resolved, That the present C.M.A. Educational Fund Committee be given the means whereby they may execute a more effective program at the county levels, and that each component county society notify its membership that this House of Delegates recommends a donation of at least $25.00 annually per member. We further recognize the work already accomplished by the C.M.A. Auxiliaries in this program, and we recommend continued and increased participation by our Auxiliaries. (Applause.)

SPEAKER CHARNOCK: Do I hear a second to this?

In order to accept this as an emergency motion, it will be necessary for you to vote by a two-thirds majority to accept it, first of all.

May I hear a motion to accept this as an emergency motion?

. . . It was moved and seconded that this be considered an emergency motion. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we accept this as an emergency measure. Is there any discussion?

All those in favor will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: It is accepted as an emergency motion.

It has been moved and seconded. Is there any discussion?

. . . The question was called for. . . .

SPEAKER CHARNOCK: If there is no discussion to

this motion, those who are in favor will signify by saying "aye."

... The motion was put to a vote and it was carried....

SPEAKER CHARNOCK: It has been passed unanimously. (Applause.)

Is there any further new business? If there is no further new business to come before this House, we will pass on to the next order of business.

The next order of business is the presentation of the new officers.

PRESENTATION OF NEW OFFICERS

DR. ALESEN: Mr. Speaker, members of the House of Delegates: It is with extreme pleasure that I present your new President, Dr. John W. Green of Vallejo. (Standing applause.)

PRESIDENT JOHN W. GREEN (Vallejo): Thank you, President Lewie.

Members of the House: I am sure you have heard about all you want to hear from me today. I made my big pitch. I thank you for its reception. I thank you for its final disposition. Now I hope that I can thank you for putting it into activation.

There was something said once to me by one of our old professors that made me think that sometimes brevity is very unusual. We had a professor of venereal diseases by the name of William T. Belford at Rush Medical College some years back.

His first address before the junior and senior sections was a little bit late in materializing. He was delayed somewhere, and came in in his Prince Albert coat, his silk hat and his gloves, put his hat on the table, took off his gloves and put them there.

"Gentlemen," he said, "I have a very interesting subject for discussion this morning." He said, "I refer to that disease called syphilis." He said, "Suspect your grandmother."

With that, he turned and walked out, and that was one hour's lecture.

My remarks are going to be just that brief. I hope, ladies and gentlemen, as one doctor said in San Francisco not too long ago—a gentleman by the name of Bender—he said in a little thing that he wrote that he hoped we would remember the Golden Rule that has to do with doctor-patient relationships, and doctor-to-doctor relationships. Please bear that in mind.

One other thing, very short: I don't believe it has been too customary over this state for doctors in general practice referring patients to specialists, to particularly inform the doctor to whom the patient is referred of the things that have already been done for the patient, and the opinions that have been expressed concerning them.

So, I would say this: that we might help our public relations a little bit as far as patients are concerned if we wouldn't do those laboratory procedures over and over again which have already been done, and which cost money in these times.

I will do the very best I can to serve you this year. I thank you for all your kindnesses. (Applause.)

DR. ALESEN: Thank you, John.

Now, ladies and gentlemen, your new President-Elect, Dr. A. A. Morrison of Ventura. (Standing applause.)

PRESIDENT-ELECT MORRISON: Thank you, Lewie.

I have been to enough of these meetings that I know the only thing you want at this time is for me to shut up, get to work, and let you go home.

Thank you very much. (Applause.)

DR. ALESEN: Your Speaker isn't new, but he is each year renewed with a brand new fire, Dr. Donald Charnock. (Applause.)

SPEAKER CHARNOCK: Thank you. We are still fighting out this resolution over here. (Laughter.)

DR. ALESEN: Now, once more, that very capable parliamentarian, Dr. Wilbur Bailey, your new Vice-Speaker. (Applause.)

VICE-SPEAKER BAILEY: This is a job you never get done perfectly, but we are glad to keep on trying.

SPEAKER CHARNOCK: Now, the next order of business is to have Dr. MacLean come up to the platform to present a certificate to the retiring President.

Dr. MacLean!

PRESENTATION OF CERTIFICATE TO RETIRING PRESIDENT LEWIS A. ALESEN

DR. MACLEAN: Mr. Speaker, members of the House of Delegates: There are some very nice things about being a retired President or a Past-President. This happens to be one of those things.

I have the honor now to tell Dr. Alesen, our retiring President, how much we appreciate his efforts.

Dr. Alesen, I am sure I express the sentiments of everybody in this House of Delegates and the entire membership of the California Medical Association when I tell you we certainly appreciate all your untiring efforts and your very dynamic leadership; not your efforts alone in promoting good medicine, but your efforts in the great fight for freedom and liberty.

I now would like to give you this plaque. (Standing applause.)

RETIRING PRESIDENT ALESEN: Mr. Speaker, my friends and fellow practitioners: Could I have just a minute or two to sing a swan song?

... There were calls of "sure." ...

RETIRING PRESIDENT ALESEN: The highest honor in California medicine you accorded me two years ago. At that time, I was a very happy man. Tonight I also am happy. That happiness is tinged with just a bit of nostalgia for passing associations.

If I had the tongue of Demosthenes I would paint in glowing terms my visits from Yreka to San Diego. But time does not permit.

I do want to tell you that wherever I have gone I have always been met with friendliness and good will; not always with total agreement, but certainly you have been cooperative.

Never in my experience have I found more men of better good will, devoted to the cause of giving to their patients a high grade of medical care.

Now I am reminded, Mr. Speaker, of Marie Corelli's famous book, "Thelma." As I say good-bye to the office of President of the California Medical Association, like Marie Corelli's hero, who got into his little barque at sunset and set his sail to the west, and then set fire to his barque, I would like to say, sir, "Sic transit gloria mundi." (Applause.)

SPEAKER CHARNOCK: There is just one more little gesture, sir.

. . . Speaker Charnock attaches a pin on Dr. Alesen's lapel. . . .

DR. ALESEN: Thank you. (Applause.)

SPEAKER CHARNOCK: This House is still in session. and is still open for business.

Dr. Robertson Ward has asked permission to propose another resolution, and I will let him present it to you and see if you wish to declare it an emergency.

DR. ROBERTSON WARD: Mr. Speaker, as long as the good old ship hasn't touched bottom, all is not lost.

I would like to introduce a resolution prepared in the last session of my committee, which is going to have to deal with this problem over the next year; I can see that. There is no way of getting out of it.

But, in the meantime, we would like to facilitate voluntary contributions to the American Medical Education Foundation, and for that reason we ask permission to introduce this as an emergency resolution. and to ask for your action on it at the present time.

No whereases.

Resolved, That each county medical society be requested to form a committee to obtain voluntary donations to the American Medical Education Foundation, and that the California Medical Association, through its Council prepare and send to each component county medical society a form to be included with the bill for dues, requesting contributions to the fund, and a report of what that individual doctor has given to his own medical school, and that this form be sent directly to each member when his bill is sent.

Now, that is the resolution in fairly simple words, and I am sure you can see my reason for introducing it, because even while we are making the decision as to whether this will eventually become dues or an assessment. we don't want to lose this opportunity to put California out in the front of voluntary contributions.

Mr. Speaker, I move the adoption of this resolution.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: This will have to be an emergency, and may I hear a motion to declare this resolution an emergency?

DR. ARTHUR A. KIRCHNER (Los Angeles): I so declare.

. . . The motion was seconded. . . .

SPEAKER CHARNOCK: It has been moved and seconded that we declare this an emergency. Is there any discussion?

. . . The motion was put to a vote and it was carried. . . .

SPEAKER CHARNOCK: The resolution of Dr. Ward has now been moved and seconded, and is now open for discussion.

A MEMBER: A point of information.

SPEAKER CHARNOCK: What is your question, please?

THE MEMBER: Won't this resolution set up another mechanism than the other one we just voted on a while ago?

SPEAKER CHARNOCK: It is practically the same thing. It is a supplementary procedure.

Is there any discussion of this?

Dr. Bender!

DR. WILLIAM L. BENDER (San Francisco County): Mr. Speaker and fellow members: I think one of the things we lacked here today was factual information about this fund and these collections. We don't know how much the medical schools really need. We don't know how much they collect independently. We don't know how many non-tax-supported schools there are in the country.

I don't believe this is necessary in the form of an amendment, but I would suggest that when the implementation of Dr. Ward's resolution is made, should the resolution pass, that any requests relative to contributions be accompanied by adequate data on the background, and the financial status and the needs of these particular schools.

SPEAKER CHARNOCK: Dr. Ludwig, have you any discussion to give on this resolution?

A MEMBER: Could I ask a question? What does this resolution add to the one we have already passed? I can't see that it adds a thing.

DR. ROBERTSON WARD: Mr. Speaker, may I answer that?

SPEAKER CHARNOCK: You may answer.

DR. ROBERTSON WARD: I presented this resolution because it gives our Council a chance to start right now to call for voluntary contributions.

. . . There were calls of "that is what the other one did." . . .

DR. ROBERTSON WARD: The other resolution referred this to my committee.

A MEMBER: You missed a resolution.

DR. L. H. FRASER: I think the confusion arises out of the fact Dr. Ward was out of the room when the other resolution was passed.

DR. ROBERTSON WARD: I didn't know that.

SPEAKER CHARNOCK: We will have Dr. Daniels speak to that.

SECRETARY DANIELS: I would like just to add that for at least a bookeeping record, the implementation of at least a portion of Dr. Ward's request would give the C.M.A. an actual knowledge of how much money is being contributed by its members, if that information is considered of value.

Now, I think it would be very nice for us to have that information if the doctors would fill out these yellow cards, or whatever would be sent out with their dues, as to how much they gave. It would give us valuable information to go on.

SPEAKER CHARNOCK: My opinion about this resolution of Dr. Ward's is that it is a supplement to the other resolution. About the only thing I picked up of difference was the fact that it would turn in the amount of money that was being subscribed.

DR. ROBERTSON WARD: I wish to apologize to the House, because I was out cooking this up while the other resolution was introduced. So, I didn't know what you were talking about. (Laughter.)

I do think all this would add to the other resolution is the opportunity to collect some information, and if that is included in the previous resolution, mine is entirely out of order.

SPEAKER CHARNOCK: Well, that particular point of information, I take it, was not included in the other one. So, I think this is a supplemental resolution. That would be satisfactory as a supplemental resolution.

. . . The question was called for. . . .

SPEAKER CHARNOCK: Those in favor of this resolution will signify by saying "aye."

. . . The motion was put to a vote and it was carried. . . .

. . . Announcements. . . .

SPEAKER CHARNOCK: A motion to adjourn is in order.

. . . It was moved, seconded, and passed that the meeting be adjourned. The meeting adjourned at 4:20 p.m. . . .

Council Meeting Minutes

Tentative Draft: Minutes of the 399th and 400th Meetings of the Council of the California Medical Association.

399th Meeting

The meeting was called to order by Chairman Shipman at 9:30 a.m., Saturday, May 23, 1953, in Conference Room 8 of the Biltmore Hotel, Los Angeles.

Roll Call:

Present during all or a part of the meeting were President Alesen, President-Elect Green, Speaker Charnock, Vice-Speaker Bailey, Secretary Daniels, Editor Wilbur and Councilors West, Wheeler, Loos, Sampson, Morrison, Dau, Ray, Montgomery, Lum, Bostick, Pollock, Frees, Carey, Shipman, Kirchner, Varden and Heron.

A quorum present and acting at all times.

Present by invitation at all or a part of the meeting were Messrs. Hunton, Thomas, Clancy, Gillette and Pettis of the C.M.A. staff; legal counsel Hassard and Louis M. Welsh; Messrs. K. L. Hamman and Marshall Virello of California Physicians' Service; Mr. Thomas Hadfield of American Mutual Liability Insurance Co.; county society executive secretaries Waterson of Alameda, Geisert of Kern, Bannister of Orange, Watson of Sacramento, Nute of San Diego, Thompson of San Joaquin, Wood of San Mateo, and Donovan of Santa Clara; Mr. Ned Burman of public relations counsel; Mr. Charles Horton, insurance analyst; and Doctors John R. Upton, Edwin L. Bruck, Sam J. McClendon, Francis J. Cox, Wilton L. Halverson, H. Gordon MacLean, Donald Cass, Leslie B. Magoon, Paul Foster, E. Vincent Askey, Burt Davis, Eugene F. Hoffman, Carl Hadley, Frederic Ewens, Elmer E. Wadsworth, Dan O. Kilroy, Edward C. Rosenow and R. Stanley Kneeshaw.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 398th Council meeting, held February 22, 1953, were approved.

2. *Membership:*

(a) Report of membership as of May 16, 1953, was received and ordered filed.

(b) On motion duly made and seconded, one 1952 delinquent member and 379 members delinquent in 1953, dues now paid, were voted reinstatement to active membership.

(c) On motion duly made and seconded, in each instance, 12 members were elected to Retired Membership. These were:

Alfred C. Siefert, Alameda-Contra Costa; C. H. Lauder, Orren Lloyd-Jones, and F. T. Read, Los Angeles; T. Binkley, Sacramento County; Frank X. Fiegel and Frank H. Folkins, San Bernardino; Matilda A. Feeley and William G. Moore, San Francisco; George W. Fowler, Santa Clara; Ernest H. Nast, Santa Cruz; C. C. Dickinson, Siskiyou.

(d) On motion duly made and seconded in each instance, 34 applicants were elected to Associate Membership:

E. Kleona Brown, T. R. Meagher, John R. Philp, James G. Terry, and Louis S. Wilson, Alameda-Contra Costa.

Patricia Henderson, H. Robert Ripley, and Elizabeth Young, Fresno County.

Ernestine Janzen and Jacob Janzen, Los Angeles County.

Arnold Shamaskin and Lee A. Stone, Madera County.

E. David Akers and Carolyn B. Albrecht, Marin County.

George Loye, Napa County.

Thomas P. Reeder, Orange County.

David R. M. Harvey and G. W. Shannon, Riverside County.

I. O. Church, Sacramento County.

Turner Camp, R. E. Clausen, Jr., Elmer Galioni, Hedda Kornfeld, John R. Mitchell, Charles F. Naegele, Robert P. Ralls, and James Yee, San Francisco County.

John Batke, San Joaquin County.

Paul Kotin, San Luis Obispo County.

Donald L. Alcott, Ernest E. Clark, Marceli Kawalek and David McKell, Santa Clara County.

R. Davis Roadruck, Sonoma County.

(e) On motion duly made and seconded in each instance, 40 applicants were voted leaves of absence.

(f) Report was made on the filing of an appeal with the A.M.A. Judicial Council by a member of the Alameda-Contra Costa Medical Association, whose revocation of membership by the county society had previously been affirmed, on appeal, by the Council. On motion duly made and seconded, it was voted to appoint Dr. Lester Lawrence as the Association's representative in this action before the A.M.A. Judicial Council. Dr. Lawrence will represent the county also.

3. *Legal Department:*

Mr. Hassard reported that a bill had been signed by the Governor to permit the Board of Medical Examiners or a group of ten or more physicians licensed by that board to seek court injunctions to prevent alleged illegal practices. He suggested that a special committee of at least ten members be established to function in this capacity, similar to a comparable committee in the state bar association.

On motion duly made and seconded, the chairman appointed Drs. Wilbur (chairman), Morrison and Bailey to investigate this proposal and report back at a recessed meeting. Upon the report of this committee, it was duly moved, seconded and voted to establish a Committee on Unlawful Practice of Medicine, such committee to consist of the members of the Executive Committee, four past presidents of the Association and the presidents of the five largest component county societies.

4. *Committee on Medical Technicians:*

Dr. Sampson, chairman of a special committee appointed earlier to review the functions and the roles of technicians in the fields of electronics and other specialties, presented a resolution which sought to define the place in the field of medicine of such technicians. On motion duly made and seconded, it was voted to approve this resolution and present it to the House of Delegates on behalf of the Council. (Resolution No. 1, 1953 Annual Session, House of Delegates.)

5. *Imperial County Hospital:*

Mr. Louis M. Welsh of legal counsel reported on meetings held in Imperial County to clarify the situation on admissibility of patients in the county hospital. He reported that Dr. Wheeler, Mr. Pettis and he had met with local physicians and believed the situation was now straightened out and the hospital operating along lines approved by the courts and the medical societies.

6. *Financial:*

(a) A report of bank balances as of May 16, 1953, was presented and ordered filed.

(b) Discussion was held on possible methods of handling the bookkeeping on the balance due the Association from New Mexico Physicians' Service. It was pointed out that the original loan of $18,000 had been reduced to $8,750 and that the assets of N.M.P.S. were inadequate to make further payments on this balance. On motion duly made and seconded, it was voted to delete this asset item, with its accompanying reserve item, from the books of the Association, with the agreement of the certified public accountant, but to keep intact the notes given by N.M.P.S. for funds advanced and to negotiate with N.M.P.S. for the acquisition of security for the balance due.

(c) Dr. Lum, chairman of the Auditing Committee, presented the proposed budget for the 1953-1954 fiscal year. The Council discussed this budget and on motion duly made and seconded, voted to delete a $6,000 item for retention of public relations counsel.

On motion duly made and seconded, it was voted to increase the honorarium to the editor of CALIFORNIA MEDICINE by $2,400 annually.

It was moved and seconded that the budget, as amended, be adopted by the Council for presentation to the House of Delegates, on the basis of dues of active members at $40 for the calendar year 1954.

A substitute motion, to set the annual dues at $36, without making further changes in the proposed budget, was regularly made, seconded and voted, the Chair casting the deciding vote. (Later revised to $40.)

(d) A request from the Riverside County Medical Association for possible assistance in meeting the costs of a disciplinary proceeding was discussed. On motion duly made and seconded, it was voted to advise the society that such expenses were properly a part of the county society's obligations, while the expenses of appeal proceedings are borne by the state and national organizations.

7. *California Physicians' Service:*

Dr. Donald Cass, president of California Physicians' Service, reported on internal reorganizations which have taken place in C.P.S. He also reported that a special committee of the Board of Trustees had been established to make a periodic review of the fee schedule. Contingency reserves are now accumulating at the rate of about $100,000 monthly and now total about $6,000,000. There are now 630,000 beneficiary members.

Mr. K. L. Hamman, Executive Vice-President of C.P.S., reviewed the financial situation of the organization.

Dr. Leslie B. Magoon commented on Dr. Cass' report and suggested that in view of a large percentage of C.P.S. beneficiaries now being over the income ceiling, the organization limit its issuance of further service contracts to those individuals under the income ceiling and provide those above the ceiling with an indemnity contract. He also suggested that any changes in the fee schedule be made only with the knowledge and consent of the entire profession.

8. *Medical Services Commission:*

Dr. Magoon, as chairman of the Medical Services Commission, reviewed the meetings and activities of that body to date. Five meetings have been held, each preceded by a meeting of the executive committee. The commission has to date considered its initial task one of self-education and has interviewed representatives of the A.M.A. Council on Medical Service, insurance brokers and others interested in the field of prepaid medical cost insurance. A subcommittee of the commission is working on a proposed set of principles which might be used as a yardstick in evaluating any prepayment plan. The

commission is also giving consideration to the status of voluntary health insurance in California.

Dr. Magoon recommended (1) that the Medical Services Commission be established in the Association through the By-Laws, (2) that the commission be authorized to appoint a subcommittee on fee schedules and that while this subcommittee is active, the present fee schedule committee of the Association remain inactive, (3) that the commission be authorized to expend $1,435 on a pamphlet on health insurance produced with the cooperation of the public relations department, and (4) that the terms of members of the commission which expire this year should be renewed for the coming three years.

Dr. Magoon expressed satisfaction with the assistance given by the Association office, especially by Mr. Robert Thomas, and stated that the commission has decided not to seek an executive secretary of its own at this time.

On motion duly made and seconded, it was voted to approve the $1,435 expenditure for health insurance pamphlets, this vote being recorded as more than three-fourths of the Council.

On motion duly made and seconded, it was voted to approve the appointment by the commission of a subcommittee on fee schedules.

9. *Advisory Planning Committee:*

(a) Mr. Hunton reported that the Advisory Planning Committee had considered the request of one county society for the application of newspaper advertising funds to local projects, rather than to the statewide advertisements prepared by the C.M.A. public relations department. It was the consensus of the committee that the advertisements prepared by the C.M.A. should be offered to the county societies for their use if they so desired, but that any project of a local nature should be a local responsibility. A certain degree of flexibility is possible in the C.M.A. advertisements, to meet local conditions. On motion duly made and seconded, it was voted to follow the policy enunciated by the Advisory Planning Committee.

Mr. Hunton also reported the consensus of the committee in regard to a statewide disability insurance program. The county society executive secretaries were particularly anxious that any statewide program of this type be first cleared with the county societies as a means of avoiding overlapping or direct competition.

10. *Group Disability Insurance:*

Dr. Kirchner, chairman of a special committee to investigate a group disability contract for Association members, reported on a policy offered by the Lumbermen's Mutual Insurance Co. through an insurance broker. Discussion was held on the terms of the proposed contract and on its possible acceptance by the component county societies. On motion duly made and seconded, it was voted to table the proposal for the time being.

At the recessed meeting of May 25, this proposal was lifted from the table and on motion duly made and seconded, it was voted to approve in principle the insurance contract offered and to submit it to the insurance committees of the component societies, for their action within 90 days. (Later amended to 30 days.)

11. *A.M.A. School Health Conference:*

On motion duly made and seconded, it was voted to appoint Secretary Daniels as the Association's representative at the A.M.A. School Health Conference to be held near Chicago in the fall..

12. *Public Relations:*

A communication from a member, taking issue with statements made publicly by an officer of a national medical organization was read and discussed. It was pointed out that the subject was due for a full discussion in the coming meeting of the House of Delegates of the American Medical Association. On motion duly made and seconded, it was voted to advise the member of the proposals to come before the A.M.A. and to advise the California delegates to the A.M.A. to give careful consideration to this matter.

13. *American Medical Education Foundation:*

Drs. Green and Bostick discussed the need of the American Medical Education Foundation for greater participation from California physicians. It was duly moved and seconded that the Council approve a resolution to be presented to the House of Delegates, calling for a per capita assessment of dues for this purpose, but on vote the motion was lost.

14. *Los Angeles County Physicians' Aid Association:*

Discussion was held on a proposal that the Association join with the Los Angeles County Physicians' Aid Association in caring for needy physicians and their families. No action was taken.

15. *Woman's Auxiliary:*

(a) On motion duly made and seconded, it was voted to appoint Drs. Dan O. Kilroy and Matthew N. Hosmer to the Advisory Committee to the Woman's Auxiliary, along with the President, President-Elect and Secretary.

(b) On motion duly made and seconded, it was voted to approve a new Constitution and By-Laws prepared by the Woman's Auxiliary, which could become effective only with Council approval.

Special Motion Regarding Adjournment:

On motion duly made and seconded, it was unanimously voted to adjourn the meeting out of respect to the late Howard Burrell, legal counsel to the California Hospital Association, and to prepare a suitable resolution to be forwarded to Mrs. Burrell.

Recess:

There being no further business to come before the meeting at that hour, the chairman announced a recess until 7:30 a.m., Sunday, May 24, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Reconvention—Sunday, May 24, 1953:

The meeting was reconvened at 7:30 a.m., Sunday, May 24, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

A quorum present and acting.

16. *Cancer Commission:*

Dr. Daniels reported that the Cancer Commission was interested in purchasing a projection machine for x-ray plates. It was duly moved, seconded and voted to authorize the purchase of this machine at a cost of not more than $500, chargeable to the budget of the Cancer Commission.

17. *Blood Bank Commission:*

Dr. Morrison discussed the request of the Tri-Counties Blood Bank in Santa Barbara for a loan to permit the establishment of new quarters. He reported that since the original request had been made, the blood bank had sold its original property and no longer needed the funds it had requested. In view of this fact and in keeping with the initial policy of making such loans only for the establishment of new blood banks, it was duly moved, seconded and voted to follow the original policy of restricting these loan funds to new blood banks.

18. *Committee on Blue Shield-Blue Cross:*

Dr. Alesen reported on meetings held by the Joint Committee on Blue Shield-Blue Cross and presented a resolution for introduction in the House of Delegates. On motion duly made and seconded, it was voted to present this resolution to the House of Delegates on behalf of the Council. (Resolution No. 2, 1953, House of Delegates.)

19. *By-Law Amendment:*

Attention was called to an earlier Council resolution to present an amendment to the By-Laws to eliminate from the Standing Committees the Committee on Medical Defense, which has been obsolete for a number of years. On motion duly made and seconded, it was voted to present this By-Law amendment to the House of Delegates covering Chapter VII, Section 1(c) and Section 10.

20. *Appreciation to Dr. Donald Cass:*

It was duly moved, seconded and unanimously voted to present to the House of Delegates a resolution expressing commendation of Dr. Donald Cass for his long and devoted service as a trustee and president of California Physicians' Service, upon the occasion of his retirement from that post.

Recess:

At this point, the Chair announced a recess until 7:30 a.m., Monday, May 25, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Reconvention:

The meeting reconvened at 7:30 a.m., Monday, May 25, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

A quorum present and acting.

21. *Committee on Problems of the Aging:*

Dr. Donald Campbell, chairman of a special committee on the problems of the aging, presented a progress report. The chairman thanked Dr. Campbell for his thorough report and the recommendations were taken under consideration.

22. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, reported that Senate Bill 1066 was well on its way through the Legislature and that his committee would continue to work for an adequate schedule of industrial fees. The chairman thanked Dr. Cox for his progress report.

23. *Council Members on C.P.S. Board of Trustees:*

Dr. Ivan C. Heron reported on the Council representation on the Board of Trustees of California Physicians' Service and gave his impression that the actions of the board have been taken with wisdom and in the interests of all parties concerned.

24. *Physician Placement:*

Dr. John Ruddock, Southern California chairman of the Advisory Committee to Selective Service, reported on physicians returning to civilian life from military service and expressed the hope that the Association might extend to all areas of the state the placement service now operated principally in the northern counties. This matter was referred to Mr. Robert Thomas for execution.

25. *Morbidity Study:*

Discussion was held on the morbidity study recently completed in Santa Clara County and it was agreed to refer this matter to the Committee on Public Health and Public Agencies.

Recess:

At this point, 9:00 a.m., Monday, May 25, 1953, the meeting was recessed until 7:30 a.m., Tuesday, May 26, 1953.

Reconvention:

The meeting was reconvened at 7:30 a.m., Tuesday, May 26, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

A quorum present and acting.

26. *Physician Placement:*

On motion duly made and seconded, it was voted to make the Association's physician placement system (item 24, above) statewide.

27. *Committee on Unlawful Practice of Medicine:*

Discussion was held on the immediate program of the Committee on Unlawful Practice. It was agreed that the functions of this committee should be to contact other groups to secure compliance with the medical practice laws, to investigate areas of unlawful practice, to maintain liaison with the Board of Medical Examiners and, failing agreement in any sector, to seek injunctions to prevent unlawful practice. It was also agreed that the medical schools of the state be asked to instruct their students in medical ethics and the responsibilities of physicians.

28. *Association Dues for 1954:*

It was reported that the Reference Committee on Finance of the House of Delegates proposed to reverse the Council's earlier decision and recommend that dues for active members for 1954 be placed at $40. On motion duly made and seconded, it was voted to support the recommendation of the reference committee.

29. *Recognition of County Secretaries:*

Councilor Morrison, chairman of a special committee to consider official recognition of county society secretaries, presented a scroll which could be presented to county society secretaries who had served five years or more. On motion duly made and seconded, it was voted to approve the presentation of such a scroll on the occasion of each five years of service of a county secretary.

30. *Ethical Status Re—Osteopaths:*

Dr. Alesen made a progress report on meetings with leaders of the osteopathic profession and it was duly moved, seconded and voted to instruct the Association's delegates to the A.M.A. to support a plan to clarify the ethical considerations concerning osteopaths.

Recess:

At this point, 10:10 a.m., the meeting was recessed until 7:30 a.m., Wednesday, May 27, 1953.

Reconvention:

The meeting was reconvened at 7:30 a.m., Wednesday, May 27, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles. A quorum present and acting.

31. *Appointments to Standing Committees:*

Dr. Daniels reported on the nominations for membership on standing committees and on motion duly made and seconded, these appointments were approved.

32. *Group Disability Insurance:*

Dr. Kirchner moved an amendment to the Council's earlier vote (item 10, above) on a group disability insurance program, to provide for consideration of the proposed program by the county societies within 30, rather than 90, days. The motion was seconded and adopted.

33. *State Department of Public Health:*

Dr. Wilton L. Halverson, State Director of Public Health, reported on several legislative proposals. A bill to provide public health services in vacation areas of the state has been signed into law and his department will work with the C.M.A. Committee on Rural Health and the Supervisors' Association to implement this measure. A rabies control bill has reached the floor of the Senate (this measure was later defeated) and a milk pasteurization bill has been tabled.

Dr. Halverson reported that the morbidity study in Santa Clara County had expended about $100,000 to determine methods. The advisory committee on this study, including Drs. West and C. V. Thompson, has recommended that no further studies along this line be made until the results of the pilot study can be evaluated.

To date this year, Dr. Halverson reported, there have been 521 cases of poliomyelitis and the current rate of incidence is about the normal expectancy. About 25 per cent of the state's allocation of gamma globulin has been received or shipped to date and if all 18,000 doses are used on immediate contacts, it is expected that about 40 cases of polio may be prevented, out of an anticipated 3,000 cases.

The outlook for encephalitis indicates a low incidence.

34. *Blood Bank Commission:*

Dr. John R. Upton, chairman of the Blood Bank Commission, reported that only a handful of blood donors had offered blood for the gamma globulin program. He reviewed the blood banking situation in California and was thanked by the chairman for his continued good work.

35. *Annual Sessions:*

On motion duly made and seconded, it was voted to hold the 1954 Annual Session in Los Angeles.

On motion duly made and seconded, it was voted to hold the 1955 Annual Session in San Francisco.

36. *Interim Session:*

On motion duly made and seconded, it was voted to hold the 1953 Interim Session in San Francisco.

37. *Committee on Public Health and Public Agencies:*

(a) Dr. Francis E. West and Dr. C. V. Thompson reported on the Santa Clara County pilot study on morbidity, reaffirming the earlier report made by Dr. Halverson.

(b) On gamma globulin, Dr. West reported that all interested parties in San Diego County have agreed to a series of press releases to advise the public on the true situation. This series will extend over the next three months and Dr. West suggested similar procedures for other counties.

(c) Report was made on studies relative to the use of penicillin ointment in the eyes of the newborn. The State Department of Public Health has approved a new regulation which would permit the physician to use his own discretion in using this agent or silver nitrate as required for many years.

(d) Dr. West reported on a recent meeting at which members of the committee and of other organizations had approved the continuation of the use of the means test for cases of tuberculosis. The same meeting disapproved the requirement of a lien on future assets of tubercular patients in county institutions.

On motion duly made and seconded, it was voted to approve further studies of the results of the Santa Clara County morbidity survey.

On motion duly made and seconded, it was voted to approve the report of the committee as a whole.

38. *Public Policy and Legislation:*

Mr. Hassard reported that a legislative measure which would have approved a short-term medical school had failed to qualify before a committee in the Legislature and could not be reactivated at this session. He also reported on several other measures before the Legislature.

39. *Annual Session Exhibits:*

On motion duly made and seconded, it was voted to record the Council's approval of the organization and layout of the exhibits at the Annual Session.

On motion duly made and seconded, it was voted to express to the exhibitors at the Annual Session the Council's appreciation and thanks for their excellent cooperation.

40. *Retiring Councilors:*

On motion duly made and seconded, the Council voted unanimously to express its appreciation to President Alesen and Councilors Pollock and Montgomery, all retiring at this time.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 9:05 a.m., out of respect to the late Howard Burrell.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

' ' '

400th Meeting

The meeting was called to order by Chairman Shipman at 8:00 a.m., Thursday, May 28, 1953, in Conference Room 6 of the Biltmore Hotel, Los Angeles.

Roll Call:

Present were President Green, President-Elect Morrison, Speaker Charnock, Secretary Daniels, Councilors West, Wheeler, Loos, Sampson, Ray, Lum, Frees, Carey, Shipman, Varden, Kirchner, Heron, Pearman, Teall and Reynolds.

A quorum present and acting.

Present by invitation were Messrs. Hunton, Thomas, Gillette and Pettis of C.M.A. staff, Legal Counsel Hassard, county executive secretary Watson of Sacramento and Drs. Elmer E. Wadsworth and Dan O. Kilroy.

1. *Introduction of New Members:*

The chairman introduced Drs. T. Eric Reynolds, Ralph Teall and Robert O. Pearman, newly elected Councilors, and welcomed them.

2. *Organization of Council:*

On nomination duly made and seconded, Dr. Sidney J. Shipman was unanimously elected chairman of the Council.

On nomination duly made and seconded, Dr. Donald D. Lum was unanimously elected vice-chairman of the Council.

3. *Appointment of Auditing Committee:*

The Chairman, with the unanimous consent of the Council, appointed Dr. Lum chairman and Drs. Ivan C. Heron and T. Eric Reynolds members of the Auditing Committee.

Recess:

At this point the Council recessed to permit a meeting of the Trustees of the California Medical Association. Upon the completion of that meeting, the Council reconvened.

4. *Committee on Postgraduate Activities:*

Dr. Edward C. Rosenow, chairman of the Committee on Postgraduate Activities, reported that the committee has now standardized the honoraria allowed speakers.

He asked authority to set the registration fee at postgraduate institutes at $10, which, upon motion duly made and seconded, was approved.

Dr. Rosenow also reported that the committee was experimenting with tape recordings of scientific papers and asked authority to investigate the possibilities of that type of lecture material. On motion duly made and seconded, approval of this activity was voted.

5. *Student Nurse Recruitment:*

Mr. Robert Thomas reported that student nurse recruitment was now being handled through the joint efforts of the California League for Nursing, the California Hospital Association and the California Medical Association. On motion duly made and seconded, it was voted to appoint Mr. Thomas as the Association's representative on the committee handling this project.

On motion duly made and seconded, it was voted to send letters of thanks to the various nurse training schools which had cooperated in the Annual Session by supplying student nurses for various duties.

6. *Southern California Office:*

Dr. Lum suggested that in view of expanded activities in the Southern California area, the Association's Los Angeles office might be expanded and additional legal services provided. It was agreed to ask the executive secretary to seek suitable office quarters in Los Angeles and to provide an estimate of the cost of establishing and operating a more adequate office, report to be made at a later meeting.

7. *Legal Retainer:*

On motion duly made and seconded, it was voted to add $3,000 annually to the retainer fee for legal counsel, effective June 1, 1953.

8. *Employees' Retirement Program*

Dr. Charnock submitted a report in connection with the employees' retirement program and employees' severance pay. With respect to severance pay, Dr. Charnock was authorized to consult with those employees not participating in the retirement program and to submit a definite plan to the Council. With respect to the retirement program, it was voted to transfer legal ownership of the present insurance annuity policies to the "Trust Fund for California Medical Association Employees" this day established by the corporation trustees of the California Medical Association. It was voted to transfer such initial funds to said "Trust Fund for California Medical Association Employees" as may be necessary in the judgment of the Auditing Committee.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 11:30 a.m., the next meeting to be at the call of the chairman.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

BRIGGS, LEROY H. Died in San Francisco, June 29, 1953, aged 70. Graduate of the University of California Medical School, Berkeley-San Francisco, 1908. Licensed in California in 1908. Doctor Briggs was a retired member of the San Francisco Medical Society, the California Medical Association, and an associate member of the American Medical Association.

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BROWNELL, EMILY M. BAER. Died in San Diego, June 11, 1953, aged 43. Graduate of the University of Illinois College of Medicine, Chicago, 1936. Licensed in California in 1943. Doctor Brownell was a member of the San Diego County Medical Society, the California Medical Association, and the American Medical Association.

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MILLER, JOHN J., JR. Died in San Francisco, June 13, 1953, aged 49, of carcinoma. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1929. Licensed in California in 1931. Doctor Miller was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

NELSON, ELFORD J. Died in Pomona, June 10, 1953, aged 57, of coronary artery disease. Graduate of the University of Toronto Faculty of Medicine, Ontario, Canada, 1920. Licensed in California in 1948. Doctor Nelson was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

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STEELE, EDSON H. Died in Los Angeles, June 23, 1953, aged 58, of subarachnoid hemorrhage. Graduate of Albany Medical College, New York, 1919. Licensed in California in 1923. Doctor Steele was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

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WHALEN, JOHN F. Died in Altadena, July 4, 1953, aged 53, of coronary artery disease. Graduate of Jefferson Medical College of Philadelphia, Pennsylvania, 1927. Licensed in California in 1928. Doctor Whalen was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 9-13, 1954

Papers for Presentation

If you have a paper that you would like to have considered for presentation, **it should be submitted to the appropriate section secretary** (see list on this page) not later than November 15, 1953.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1953. (No exhibit shown in 1953, and no individual who had an exhibit at the 1953 session, will be eligible until 1955.)

SCIENTIFIC PAPERS . . .

. . . SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy *Lazarre J. Courtright*
490 Post Street, San Francisco 2

Anesthesiology *Marshall L. Skaggs*
18 Hillcrest Road, Mill Valley

Dermatology and Syphilology . . *Walter F. Schwartz*
696 East Colorado Street, Pasadena 1

Eye, Ear, Nose and Throat—

Eye *Alfred R. Robbins (Chairman)*
1930 Wilshire Boulevard, Los Angeles 57

ENT *Francis A. Sooy*
490 Post Street, San Francisco 2

General Medicine *Edgar Wayburn*
490 Post Street, San Francisco 2

General Practice *Joseph W. Telford*
3255 Fourth Avenue, San Diego 3

General Surgery *William Brock*
2633 Pacific Avenue, Stockton 4

Industrial Medicine and Surgery *Verne G. Ghormley (Asst. Secty.)*
2014 Tulare Street, Fresno

Obstetrics and Gynecology . . . *Charles T. Hayden*
411 Thirtieth Street, Oakland 9

Pathology and Bacteriology *Paul Michael*
450 Thirtieth Street, Oakland 9

Pediatrics *Gordon F. Williams*
1111 University Drive, Menlo Park

Psychiatry and Neurology . . . *George N. Thompson*
2010 Wilshire Boulevard, Los Angeles 57

Public Health *L. S. Goerke*
116 Temple Street, Los Angeles 12

Radiology *H. R. Morris*
1027 "D" Street, San Bernardino

Urology *Thomas I. Buckley*
431 Thirtieth Street, Oakland 9

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

The National Gastroenterological Association will hold its 18th Annual Convention and Scientific Sessions at the Biltmore Hotel in Los Angeles, October 12-14, 1953. Following the convention, on October 15, 16 and 17, the Association's Fifth Annual Course in Postgraduate Gastroenterology will be given at the Biltmore Hotel and the College of Medical Evangelists in Los Angeles. The course will be under the personal direction of Drs. Owen H. Wangensteen of Minneapolis and I. Snapper of Chicago, who will be assisted by a faculty from the medical schools in and around Los Angeles.

Further information concerning the program and details of the postgraduate course may be obtained by writing to the Executive Officer, National Gastroenterological Association, 1819 Broadway, New York 23, N. Y.

* * *

The staff of **Saint John's Hospital,** Santa Monica, will present its Fifth Annual Postgraduate Assembly, September 14, 15 and 16. Guest speakers are Forrest H. Adams, M.D., associate professor of pediatrics, U.C.L.A. School of Medicine; William S. Adams, M.D., associate professor of medicine, U.C.L.A. School of Medicine; William Boyd, M.D., professor of pathology, University of British Columbia, Vancouver, Canada; William A. Cooper, M.D., associate professor of clinical surgery, Cornell University, New York; L. Henry Garland, M.D., clinical professor of radiology, Stanford University School of Medicine, San Francisco; Willard E. Goodwin, M.D., professor of urological surgery, U.C.L.A. School of Medicine; Frank J. Heck, M.D., professor of medicine, Mayo Clinic, Rochester, Minnesota; Mr. Murray Kahane, psychologist, Marion-Davies Clinic; Louis Lichtenstein, M.D., pathologist, Wadsworth Veterans Hospital, Los Angeles; Newell W. Philpott, M.D., professor of obstetrics and gynecology, McGill University, Montreal, Canada; and Joseph Teicher, M.D., psychiatrist, Marion-Davies Clinic, and director of the Los Angeles Child Guidance Clinic.

The assembly is approved by the Council on Medical Education and Hospitals of the American Medical Association. Registration is open to all members of the medical profession. The fee is $10. Further information may be had from John C. Egan, M.D., Saint John's Hospital, Santa Monica.

* * *

Dr. Gordon Goodhart was appointed dean of Southern California School of Medicine, effective July 1. He had been associate dean for the past year and he succeeds Dr. Burrell O. Raulston, dean for ten years and on the faculty since 1929, who will become dean emeritus.

SAN FRANCISCO

Establishment of an **orthopedic clinic** at Saint Francis Memorial Hospital, San Francisco, was announced recently by Dr. C. P. Thompson, president of the board of trustees of the hospital. Aims of the clinic are to aid patients who are in difficult financial circumstances, assist the teaching program for resident physicians and promote research. The hospital's memorial endowment fund will support the clinic insofar as possible. However, there will be small charges for each visit and for x-rays, drugs and hospitalization.

* * *

Five all-day **seminars** are to be held at **Children's Hospital,** San Francisco in the season of 1953 and 1954:

October 31, 1953, Nevi, Tumors and Malignancies in Childhood.

December 5, 1953, Surgery and Anesthesia in Childhood, with a discussion on the effects of hospitalization on the young child for surgical procedures.

January 23, 1954, The Problems of Prematurity and the Newborn Infant.

March 20, 1954, Acute and Chronic Infections and the Choice of Antibiotics in Treatment.

April 24, 1954, Childhood Ecology, with a discussion of physical, mental and emotional growth and development of the young child; the effects of deprivation of maternal care, and the impact of environment on the child.

Further information may be obtained from H. E. Thelander, M.D., Children's Hospital, 3700 California Street, San Francisco.

GENERAL

The American Urological Association has announced the opening of competition for its annual award of $1000 (first prize of $500, second prize $300 and third prize $200) for essays on the result of some clinical or laboratory research in urology. Competition is limited to urologists who have been in such specific practice for not more than ten years, and to men in training to become urologists. Full particulars may be obtained from the executive secretary, William P. Didusch, 1120 North Charles Street, Baltimore, Maryland. Essays must be in his hands before February 1, 1954.

All insurance companies writing **workmen's compensation insurance** in California have now adopted standard report forms. These forms, to be used henceforth in all industrial accident cases, will simplify the paper work in physicians' offices in reporting and billing. They will be supplied by the insurance companies on request. Arrangements have also been made for physicians to purchase their own supplies on the four forms used; if desired, the physician's name and address can be imprinted on the forms for positive identification. It is believed that many physicians handling a small volume of industrial work will want to keep on hand the small pads of 100 each of Forms 5020-A and 5020-B, the supplemental report and the final report and bill. A packet of 100 each of these forms will be supplied by the printer for $1.95 postage paid, or a packet of 500 each for $7.95. Quantities of 1000 or more may be bought at lower unit prices.

Inquiries about these standard forms should be sent direct to the Crenshaw Printers and Stationers, 2543 Crenshaw Blvd., Los Angeles 16. Telephone REpublic 3-1652. The forms are **not** handled by the C.M.A.

The American Dermatological Association has announced a contest for a series of prizes for the best essays submitted on original work, not previously published, relative to some fundamental aspect of dermatology or syphilology. Cash prizes will be awarded as follows: $500, $300 and $200 for first, second and third place, respectively.

Manuscripts must be submitted not later than December 1, 1953. Details of the contest may be obtained from Dr. J. Lamar Callaway, Secretary, American Dermatological Association, Duke Hospital, Durham, North Carolina.

POSTGRADUATE EDUCATION NOTICES

MEDICAL EXTENSION UNIVERSITY OF CALIFORNIA

Postgraduate Courses for 1953

Obstetrical and Gynecological Conference, September 2, 3, 4. Place and fee to be announced.

Ophthalmology (for specialists), September 7 through 12. Fee $75.00. Medical Center.

Medicine for General Practitioners, September through November. East Oakland Hospital. Fee $50.00.

Evening Lectures in Medicine, September through November. Fee $50.00. Mills Memorial Hospital, San Mateo (probably).

Occupational Health, October 14, 21, 28 and November 4. Fee to be announced. Medical Center.

Contact: All inquiries to be addressed to Stacy R. Mettier, M.D., Professor of Medicine, Head of Postgraduate Instruction, Medical Extension, University of California Medical Center, San Francisco 22.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

1. What's New in Therapeutics—Wednesday, August 12.
2. Office Gynecology—Wednesday, August 19.
3. Peripheral Vascular Diseases—Wednesday, August 26.

All of these one-day symposia will be given at the U. S. Naval Hospital in San Diego, and they are being given in cooperation with the San Diego County Medical Society.

Contact: Dr. Thomas Sternberg, Office of Medical Extension, University Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Cardiology and Vascular Disease—No. 832

Date: September 14, 1953—full time, one year.

Fee: $1,000.00.

History, physiology, pathology, diagnosis, treatment of cardiac and peripheral disease. Emphasis placed on bedside teaching, electrocardiography, fluoroscopy, and associated diagnosis aids. Designed to meet the requirements for certification by the American Board of Cardiology. Six hours of didactic lectures per week; 35 hours of laboratory work. 32 units credit for master's degree. Course Director: George C. Griffith, M.D.

Gastroenterology—No. 844

Date: September 21, 1953—Full time, one year.

Fee: $1,000.00.

Course is designed to give a limited number of qualified physicians advanced training in this field. The didactic courses will include intensive study of the physiology, pathology, as well as the clinical aspects of the diseases of the digestive tract. Clinical teaching will be done in the outpatient department of the Los Angeles County Hospital. 32 units credit for master's degree. Course Director: George K. Wharton, M.D.

Intensive Review of Internal Medicine—No. 855

Date: September 21, 1953. Applications accepted until August 1, 1953.

Fee: $50.00.

A two-week course offered for students preparing to take the examination for the American Board of Internal Medicine. Course consists of 40 hours of didactic lectures, 8:30 a.m. to 12:30 p.m., Monday through Friday. It will cover the fields of Endocrinology, Cardiology, Gastroenterology, Hematology, Arthritis, Neurology, and Isotopes. Course Director: Donald Petit, M.D.

Diagnostic and Therapeutic Radiology—No. 858

Date: Course begins by arrangement.

Fee: 3 mos.—$250.00 6 mos.—$ 500.00
9 mos.—$750.00 12 mos.—$1,000.00

This course is designed for a limited number of qualified physicians who wish to prepare for the American Board of Radiology, and who wish specialized training in a particular field of medicine such as orthopedics, cardiology, etc. Course will be conducted in the Department of Radiology at the Los Angeles County Hospital. Course Directors: Ray A. Carter, M.D., George Jacobson, M.D.

Anesthesia

Date: Course begins by arrangement.

Fee: $300.00 (full time, three months).

Basic principles and techniques involved in administering the various anesthetic agents, including oxygen therapy and operating room care of patients. Open to a limited number of qualified physicians and dentists. Emphasis placed on practical administration of anesthetic agents. Presented at the Los Angeles County Hospital. Course Director: J. S. Denson, M.D.

Contact: Gordon E. Goodhart, M.D., University of Southern California School of Medicine, Division of Medical Extension Education, 1200 North State Street, Box 158, Los Angeles 33, California.

COLLEGE OF MEDICAL EVANGELISTS

Full-Time Basic Science Course in Surgery and Surgical Specialties—Date: October 5, 1953 through June 11, 1954. Fee to be announced.

Contact: H. M. Walton, M.D., Chairman, Postgraduate Division, 312 North Boyle Avenue, Los Angeles 33.

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology.

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.



THE PHYSICIAN'S *Bookshelf*

A MANUAL OF CLINICAL ALLERGY. John M. Sheldon, M.D., Professor of Internal Medicine and Assistant to the Chairman of the Department of Postgraduate Medicine; Robert G. Lovell, M.D., Instructor in Internal Medicine, and Kenneth P. Mathews, M.D., Assistant Professor of Internal Medicine, all at the University of Michigan Medical School. W. B. Saunders Company, Philadelphia, 1953. 413 pages with 27 figures, $8.50.

Physicians interested in studying and treating allergic disease as a part of their practice and laboratory technicians will find this manual of great value in establishing diagnostic methods and selecting their equipment for office and laboratory and as a practical supplement to standard reference books on allergy. The sections on skin testing and other laboratory procedures, patch testing, identification of air-borne allergens, the preparation of antigens and vaccines, and office planning are clearly presented. General practitioners and allergists alike will find the chapter on patch testing of particular interest.

Drug therapy in allergic disease is well presented. The list of proprietary preparations with a breakdown of their contents is to be commended. In general, however, the methods and problems of therapy are inadequately covered. The outline of desensitization procedures is too briefly presented. The value of high dilutions of antigens in highly sensitive individuals is not discussed. Problems in the diagnosis and treatment of food allergy deserve more discussion. Illustrations and tables are clearly presented, especially those dealing with the identification of pollen-bearing plants and molds. The index is complete and the text is well written and easy to read.

* * *

CLINICAL ALLERGY. French K. Hansel, M.D., M.S., Director, Hansel Foundation for Education and Research in Allergy; Chief of Allergy Service, DePaul Hospital, St. Louis. The C. V. Mosby Company, St. Louis, 1953. 1,005 pages, 86 illustrations and three color plates, $17.50.

As stated in the preface, "Clinical Allergy" is a complete textbook on the general subject of allergy. The author has performed a monumental work in the gathering, classifying and presenting of his subject. A number of good textbooks on allergy, by other outstanding men, are available, but here, for the first time, is a complete codification and presentation of all the data presently available.

Because of the highly specialized terminology employed in the field of allergy, the author has included a complete glossary of the common terms, which is the first time this has been done in such a book. This will prove a distinct advantage to the general practitioner or beginner in allergy. It will clarify for physicians who are not specialists in allergy, the articles which appear constantly in the medical literature as well as this book and other similar ones.

The volume includes no less than 53 chapters and runs to slightly more than one thousand pages. The entire field of allergy is thoroughly covered, beginning with the terminology and history of allergy and continuing through all of its many phases. There are chapters devoted to the basic concepts of anaphylaxis and allergy; introduction to clinical allergy; allergy to biologic products; entomogenous allergy; allergy to drugs; foods as allergens, allergy to fungi; allergy to inhalants; history taking and diagnosis; supplies and preparation of dilutions; methods of diagnostic testing in allergy; allergy in otolaryngology; the nasal and sinus manifestations of allergy; the cytology of the secretions in allergy; hay fever; allergy in otology; allergy in ophthalmology; bronchial asthma (two chapters are devoted to this subject and a third discusses the sinuses and asthma); the primary management of the allergic patient; respiratory allergy; the antihistamines; ACTH and cortisone; treatment of allergic manifestations by immunologic methods; gastrointestinal allergy; food allergy; allergic dermatitis; cerebral allergy; the relation of allergy to the cardiovascular system. These chapter headings merely indicate the scope of the volume as there are many more chapters not mentioned here.

Five full chapters are used to adequately cover the very important subject of allergy in children. The chapters on childhood allergy include, in the following order: causes and prevention; respiratory manifestations; paranasal sinuses; gastrointestinal and other manifestations; dermatoses. These chapters should be of great assistance to pediatricians as well as general practitioners who see many cases of allergy in children.

The index is complete and accurate and should enable the busy physician with a minimum of time to find the answers to his questions concerning allergy.

The earlier book by French K. Hansel, M.D., "Allergy of the Nose and Paranasal Sinuses," which was published in 1936 was excellent in its field. However, as the title indicates, its field was limited. With the publication of "Clinical Allergy," however, he has widened the scope of his subject to cover the entire field of allergy. Dr. Hansel's stated purpose in this book was to present a complete text on the subject of allergy and he has certainly succeeded in doing so. It is recommended wholeheartedly and without reservations to all medical students and to all physicians interested in this field of medicine.

* * *

THE PHARYNX—Basic Aspects and Clinical Problems. Edited by Abraham R. Hollender, M.D., F.A.C.S., Professor of Otolaryngology, Emeritus, University of Illinois College of Medicine. The Year Book Publishers, Inc., 200 East Illinois, Chicago, 1953. 560 pages, $15.00.

This book is worthwhile and practical. The anatomy, physiology and significance of pharyngeal disorders and their relations to systemic disease are stressed. The subject matter presents contributions of several authors. The diagnostic methods and therapeutic recommendations are modern and current.

The format of the book is somewhat unusual. Each chapter starts with an editorial introduction and is concluded with an editorial comment.

DIRECT ANALYSIS—Selected Papers. John N. Rosen, M.D. Grune and Stratton, New York, 1953. 184 pages, $3.75.

In recent years a good deal of attention has been given to a special type of psychotherapy which has been worked out by Dr. John N. Rosen. Dr. Rosen gives the term "Direct Analysis" to his method of therapy and theory of schizophrenia. This technique of treatment has been utilized almost entirely in the treatment of schizophrenics and the author reports quite optimistically on the treatment of extremely uncooperative schizophrenics, many of whom were considered hopelessly chronic deteriorated cases.

The book consists of nine papers, only one of which was written especially for this book, the other eight papers being revised versions of papers published between 1946 and 1952. As published, the volume is an excellent presentation of the author's views and the techniques of treatment which he uses. Paper 1, entitled "Direct Analysis: General Principles," is essentially a summary of the author's views. In general these views follow the theories of Freud, but the technique of treatment is in many ways the exact opposite of the orthodox treatment of Freud, with the patient lying on a couch and with emphasis on the passive attitude on the part of the therapist.

The author has a number of interesting formulations which are quite clearly presented and which are at variance with most of the theories and techniques in general use. The reviewer would not agree with a number of these ideas presented by the author, but would recommend that anyone interested in the treatment of schizophrenia should familiarize himself with this material, which certainly merits careful study by any student of psychiatry. At least the author is entitled to a good deal of credit in breaking away from orthodox doctrines and attempting to work out his own formulation. His reasons for all this are given, his results are also stated and the reader can draw his own conclusions from this very clear and interesting presentation.

* * *

GASTRIC CANCER. Alfred H. Iason, M.D., Attending Surgeon, Adelphi Hospital; Director of Surgery, Brooklyn Hospital for the Aged; Instructor in Anatomy, New York Medical College; with illustrations by Alfred Feinberg, Instructor of Medical Illustration, Department of Pathology, College of Physicians and Surgeons, Columbia University. Grune and Stratton, New York, 1953. 316 pages, $7.50.

According to the author the book was written in order to summarize succinctly for the undergraduate student, the practicing physician and the surgeon, the cumulative literature concerning gastric cancer, and to crystallize the author's experience in that field. In a sense no doubt his objectives are reached and the book contains a great amount of useful information. In an apparent effort to include everything, however, there is a lack of emphasis on the important points which limits its value for students and physicians. The chapters are arranged in an orthodox manner, beginning with anatomy and histology, and continuing with incidence, etiology, pathology, symptomatology, diagnosis and finally surgery. A number of different surgical procedures are described, commencing with total gastrectomy, then different forms of subtotal resections and finally the varied palliative operations. No mention is made of the substitution of the cecum, colon or jejunum after total gastrectomy. The book consists largely of a collection of facts, opinions, and methods, and is of value to this extent. The author does not make known his own beliefs and preferences based on his own experiences and hence the book is lacking in that personal touch which adds so much to the interest and value of any work.

PSYCHOANALYSIS, MAN, AND SOCIETY. Paul Schilder, M.D., Ph.D., Late Research Professor of Psychiatry, New York University College of Medicine and Late Clinical Director of Bellevue Hospital Psychiatric Division. Arranged by Lauretta Bender, M.A., M.D., Professor of Clinical Psychiatry, New York University College of Medicine, Senior Psychiatrist, Bellevue Hospital, New York City. W. W. Norton & Company, Inc., 1951. 382 pages. $4.00.

This is a book of twenty chapters, nineteen of which were originally published as separate papers. Included in this book are discussions of alcoholism, criminality and the adjustment of man generally to society. Of particular interest to many will be Chapter 18, Psychoanalysis of Economics. Although it was published in the *Psychoanalytic Review* on October 1940, much of it is of great interest in view of the present tensions between the United States and Russia.

A comparison made about the views of Marx and Freud is of special interest. Schilder points out that both Marx and Freud were Jews. "Marx and Freud both found out that individuals live up to demands of which they are not conscious. However, Marx's ideologies comprise the economic and social forces as well as sexual behavior. The accent is on the former . . . Marx put the emphasis on the economic forces, self-preservation and reproduction in the widest sense, Freud on the libidinous (sexual) forces."

In discussing all the material in this chapter, Schilder makes use of conventional orthodox psychoanalytic interpretations. However, he does not hesitate to criticize Freud and does give Marx credit for emphasizing the importance of economic motives and the idea that these often affect individuals at an unconscious level. He feels that Freud has not understood all of this adequately and that his attempts to explain the desire for economic survival are unclear and inadequate. The following is worth quoting on this point: "The basic contention of Marxism is that economic drives and needs have to be fulfilled if the individual wants to continue living . . . One must admit that psychoanalysis has neglected this viewpoint to a great extent. . . . In psychoanalysis the necessity for food and for the satisfaction of hunger appears as oral libido. When one looks over large parts of the psychoanalytic literature one would not conceive the idea that one eats because one is hungry and wants food to sustain one's life, but would rather suppose that eating is a sly way of satisfying oral libido. . . . The overextension of the libido theory into the oral sphere is the beginning of the downfall of the psychoanalytic theory of instincts. It finally leads indeed to a pansexualism since, according to Freud, the death instincts are not immediately experienced."

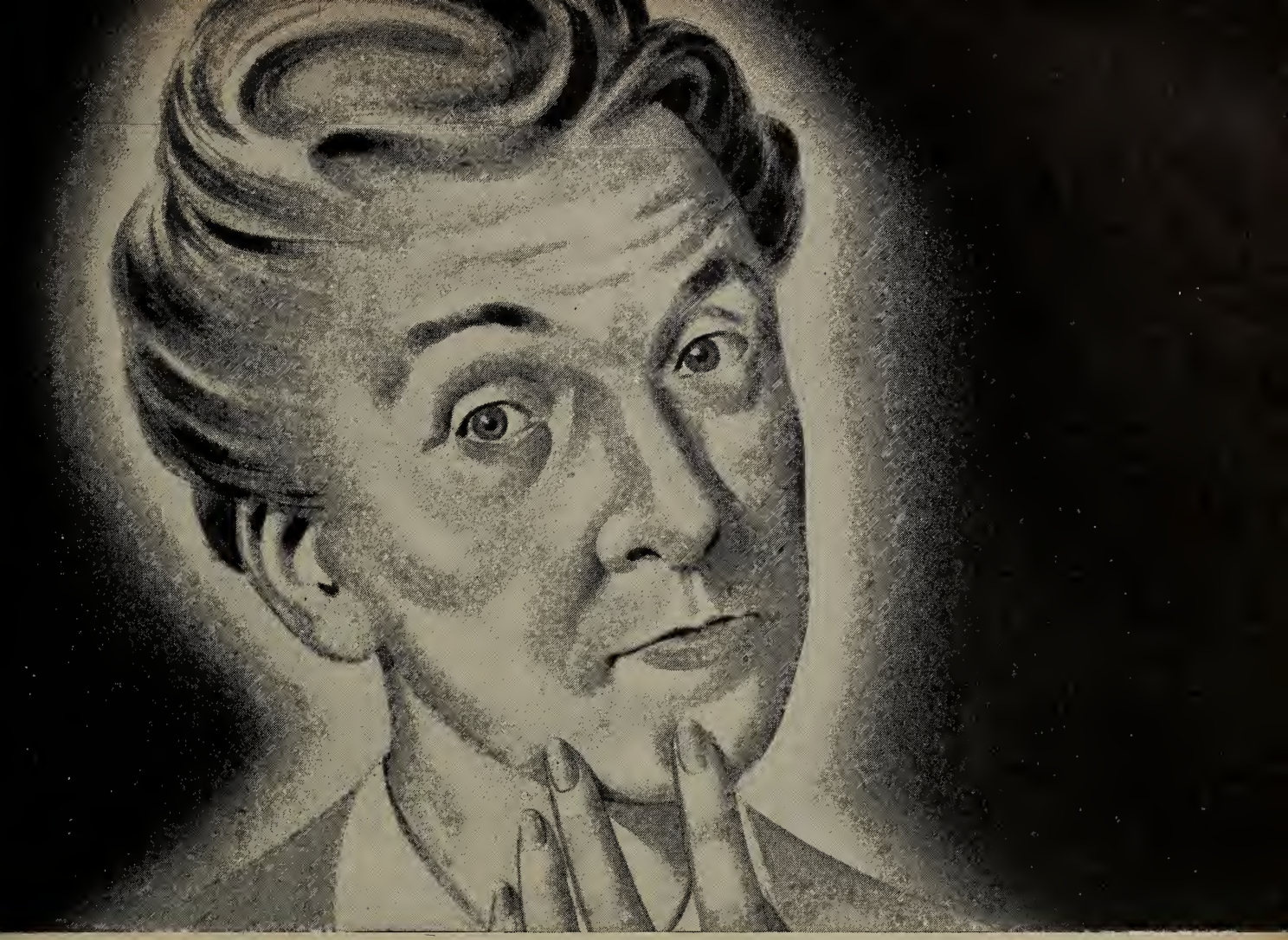
This whole book is full of many interesting and stimulating observations and is recommended for reading not only by psychiatrists but by all those interested in problems of human behavior and man's relation to society.

* * *

DISORDERS OF THE CIRCULATORY SYSTEM. Edited by Robert L. Craig, M.D. A Symposium—Presented at the Twenty-fourth Graduate Fortnight of the New York Academy of Medicine, October 8 to 19, 1951. The Macmillan Company, New York, 1952. 304 pages, $5.50.

This group of good monographs on disorders of the circulatory system was presented before the New York Academy of Medicine in October 1951. It gives the reader a comprehensive understanding of present-day clinical practice and laboratory investigation—one which would require much more extensive study were it not compressed so well.

It is highly recommended for physicians and students with a particular interest in this field.



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1. Savage, M. B., in discussion of Davis, C. H., and Grand, C. G.: Trichomonas Vaginalis Donné: An Evaluation of Experimental and Clinical Data, Am. J. Obst. & Gynec. *64*:544 (Sept.) 1952.

2. Upton, J. R.: Symposium: Certain Aspects of Office Treatment in Obstetrics and Gynecology: Trichomonas Vaginalis Vaginitis, West. J. Surg. *60*:222 (May) 1952.

3. Kleegman, S. J.: Treatment of Trichomonas Vaginitis, GP *6*:49 (Aug.) 1952.

4. Kanter, A. E.: The Recognition and Treatment of Vaginal Lesions, Postgrad. Med. *12*:457 (Nov.) 1952.

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(Continued from Front Advertising Section, Page 30)

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Efforts in the last few years to alleviate the shortages in the fields of physical and occupational therapy have brought about a considerable increase in the number of schools and personnel, the report said. In less than 20 years, the number of physical therapy schools has risen from 13 to 37. There were 592 students in such schools and 582 graduates during 1952.

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During the last ten years, the number of schools for medical record librarians has more than doubled. In 1943 there were only 10; in 1952 there were 23, 19 of which graduated 92 students during the year.

The report was prepared by Dr. F. H. Arestad, Chicago, associate secretary of the council, and Miss Mary A. McGovern, Chicago, a member of the council's staff.



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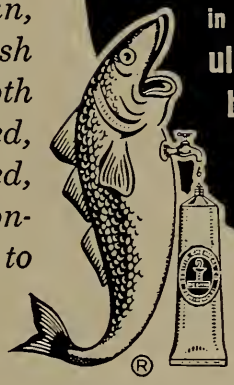
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1. Behrman, H. T., Combes, F. C., Bobroff, A., Leviticus, R.: Ind. Med. & Surg. 18:512, 1949.
2. Turell, R.: New York St. J. M. 50:2282, 1950.
3. Heimer, C. B., Grayzel, H. G., and Kramer, B.: Archives Pediat. 68:382, 1951.

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Modern Medicine's Triumph Over Tuberculosis

Developments in chemotherapy and major chest surgery and the use of antibiotics are the reasons for the remarkable changes in the treatment of pulmonary tuberculosis during the last 15 years, it was reported in a recent issue of the *Journal of the American Medical Association.*

"In a short period of time, these changes have altered the prognosis of tuberculosis by a phenomenal degree," according to Dr. William Weiss, Philadelphia. Dr. Weiss is associated with the department of chronic diseases of the chest, Philadelphia General Hospital, and the Woman's Medical College of Pennsylvania.

"Institutional atmosphere has been converted from hopeless resignation associated with the predominant purpose of segregation to one of encouragement associated with an aggressive therapeutic attack, particularly in general hospitals with large tuberculosis units," he added.

Dr. Weiss based his conclusions on a comparative study of the tuberculosis wards of the Philadelphia General Hospital in 1937 and 1952.

Results disclosed a change in the type of patient, from the younger to the older age groups. A great increase in the proportion of Negro women hospitalized, but no significant change in the proportion of Negro men was also shown. There was a large decrease in the number of white patients, both men and women.

"There has been a marked, over-all drop in the mortality rate since 1937," Dr. Weiss pointed out. "In that year, the mortality rate was highest in Negro patients and lowest in white women. The greatest drop in mortality has occurred in the Negro patients, especially the Negro women, and the least drop has occurred in white men.

"These changes are important in the evaluation of modern therapy. Negro patients used to have a much poorer prognosis than white patients; they now have a slightly better prognosis while under hospital care. The probable explanation for this is that acute exudative tuberculosis is more apt to develop in Negro patients, especially Negro women, than in white patients, and it is this type of lesion that responds best to antimicrobial therapy.

"In retrospect, the rapid evolution of modern therapeusis for tuberculosis during the last six years or so has been almost dramatic. It should be noted that therapy is more aggressive today than it was 15 years ago. Although the turnover of patients in 1952 was less than half that of 1937, the number of major surgical procedures carried out in 1952 exceeded the number in 1937.

"In addition, at any one time in 1952, the percentage of hospitalized patients receiving antimicro-

(Continued on Page 50)

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*Hermann, I. F., and Smith, R. T.: JL.-Lancet 71:271 (July), 1951.

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(Continued from Page 35)

that recommended study by the Board of Trustees, a meeting of mutually interested parties in the radio and television industry, and the consultation of county and state medical societies with local radio and television stations to effect solutions for advertising problems that affect the medical profession.

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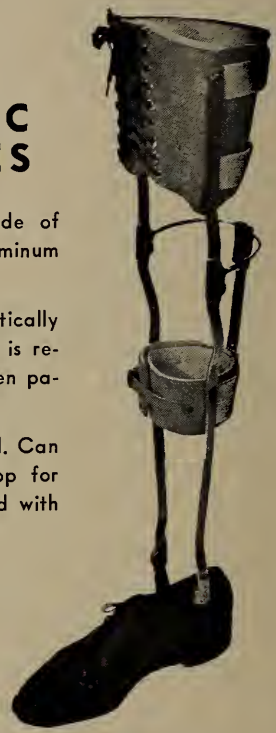
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Swimming contributes to personality development, Dr. Kleinschmidt wrote in a recent issue of *Today's Health* magazine published by the American Medical Association. It has social values, as people in the water together learn to respect each other's rights and to play together.

"Water sports have done much in the last generation to dispel unhealthful prudery," he added. "At the water front, the human body in all its grace is beautifully revealed in a natural, wholesome manner, and the false shame of the Victorian period has all but vanished."

Although the assets of swimming far outweigh the liabilities, such liabilities should be recognized, as well as the minor health hazards that can be avoided or mitigated, Dr. Kleinschmidt stressed.

1. Physical inadequacies, such as absence of one or more limbs, partial paralysis, deformity, blindness and deafness, may curtail water activity, but seldom entirely prevent a person from engaging in some kind of water sport.

2. A handicapped heart, capable of serving a person in ordinary activities of life, may not be able to take on the additional strain of vigorous activity in the water. Each such case should be considered by a physician.

3. Shortness of breath may be an indication that some part of the body's capacity is being overtaxed, and should be heeded as a warning to slow down.

4. Arterial changes that come normally with age or as the result of disease should be carefully considered by the swimmer.

5. Disorders of the mucous membranes of the eyes, ears, nose and throat are commonly aggravated by water immersion. Persons suffering from such conditions should keep their heads out of water.

"Overexposure to the sun is one of the health hazards in outdoor water sports too cavalierly brushed aside by many water enthusiasts," Dr. Kleinschmidt stated. "Overexertion is a health hazard frequently ignored. Cramp should be heeded as a warning to leave the water promptly."

Value of Paternity Blood Grouping Tests Cited

Approximately 50 per cent of men falsely accused of paternity can establish their innocence through blood grouping tests, in the opinion of Dr. Lester J. Unger, New York.

"Although these blood tests may exclude paternity, they can never prove it," Dr. Unger wrote in a recent issue of the *Journal of the American Medical Association*. Dr. Unger is director of the blood and plasma bank of the University Hospital, New York University-Bellevue Medical Center.

"On occasion, even nonexclusion, although not proving paternity, has allayed a husband's suspicions and saved a marriage," he stated. "A man not excluded by the tests may, nevertheless, really not be the father, because by coincidence his blood may contain the same characteristics as those of the actual father."

Dr. Unger reported on a series of 108 cases in which blood grouping tests were used to determine paternity. Thirty falsely accused men were excluded as fathers of the children involved in the disputes, and the results were accepted as conclusive and largely determined the outcome in each case.

"The scientific foundation on which the value of blood tests in paternity disputes rests is the individuality of different persons' blood and the fact that the characteristics that determine this individuality are inherited according to definite principles.

"All inherited characteristics are determined by genes, which are present in rod-like bodies called chromosomes. These latter occur in pairs in the somatic cells, and one member of each pair is present in the nucleus of the male sperm and in that of the female ovum. Thus, each parent makes an equal genetic contribution to the blood group characteristics present in the red blood cell envelope of their offspring.

"The complete blood grouping of a person may some day become almost as distinctive as his fingerprint."

Of the various blood group systems presently known, for various reasons only three are used medicolegally, Dr. Unger stated. Proper performance and interpretation of the tests demand special knowledge, training and experience. Therefore, he said, only qualified experts should undertake medicolegal cases of this nature.

Dr. Unger pointed out that nine states have laws giving the courts power to order blood grouping tests when indicated in paternity disputes, while in the other states tests can be carried out with consent of the parties involved, and the results are admissible as evidence. However, he added, while the results of an exclusion of paternity are admissible in evidence, they are not necessarily binding on the court.

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Modern Medicine's Triumph Over Tuberculosis

(Continued from Page 38)

bial therapy approached a maximum of 92 per cent. Since the percentage of patients receiving forms of treatment other than bed rest was relatively small (in 1937), it is reasonable to attribute most of the favorable results of modern treatment to antimicrobial drugs. In fact, the relative increase in major surgical procedures, particularly the development of pulmonary resection, has been possible only because of antimicrobials."

Profound change also has occurred in the clinical manifestations of tuberculosis and its complications since the introduction of effective antimicrobials, Dr. Weiss added. Today, when such drugs are given to a new patient, cough rapidly lessens so that narcotics are seldom used; toxicity, fever and night sweats soon disappear, and, in most cases, the patient begans to gain appetite, weight and strength. Distressing complications such as laryngitis and enteritis are almost nonexistent, and formerly fatal complications, such as miliary tuberculosis, meningitis and pericarditis, often respond to treatment.

The new trend in therapy has resulted in longer hospitalization, and the major effect of antimicro-

(Continued on Page 51)

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Modern Medicine's Triumph Over Tuberculosis

(Continued from Page 50)

bial treatment has been a dramatic lowering of the mortality rate, Dr. Weiss stated. The percentage of deaths has dropped from 43 per cent in 1937 to 18.2 per cent in 1952. In 1937, only two per cent of the patients remained in the hospital for six months or more, as contrasted to 55 per cent in 1951; in 1937, no patients remained for 12 months or more, while 29 per cent did so in 1951.

This longer hospitalization has aggravated, rather than alleviated, the need for hospital beds for tuberculosis patients, he concluded, adding:

"Although there has been a significant and continued decrease in tuberculosis mortality, morbidity rates have continued at a high level. This indicates that we have not greatly reduced the contamination of society.

"Although relapse rates after antimicrobial therapy are not yet available, long-term follow-up studies will probably show that drugs often serve only to delay death rather than to achieve a 'cure.' For this reason, the problem of tuberculosis will continue to be one of major proportions for some time."

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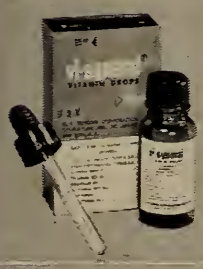
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1. Lewis, J. M. and Cohlan, S. Q.: M. Clin. N. A. 34:413, March 1950.

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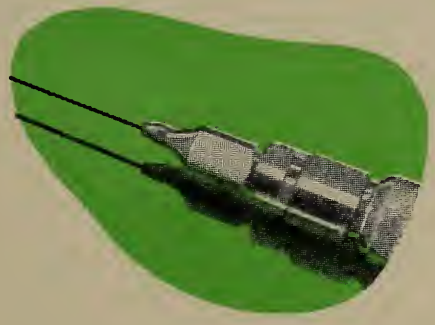
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In his address before the A.M.A. House of Delegates recently in New York, President Edward J. McCormick, Toledo, outlined a nine-point program for continued improvement in the medical care setup for the nation.

Excerpts from his proposals follow:

"1. The distribution of doctors is a problem. Much has been done by medical organizations to solve it. Placement services are now in existence in 37 states. Of these, 32 are operated by medical societies. It is important to the future of medicine that every community have access to a physician. Medicine must actively aid those communities which are trying to attract doctors.

"2. Over 600 of our county medical societies now have 24-hour emergency call services. I urge all others to support such a system.

"3. Every medical society must have a strong and fearless mediation committee to hear patients' complaints. These must not be whitewash committees. They must be true to the purpose of their founding by reprimanding and disciplining physicians found guilty of exploiting their patients. Only in this way can public confidence in medicine be maintained.

"4. Physician and hospital relationships must be clarified and steps taken toward mutual cooperation. I advise the formation of physician-hospital committees by state and county medical societies to work toward better relations in local communities. This has already been done with some success in some states.

"5. Every county society should become an active unit in the nationwide effort to develop and expand voluntary health insurance. We must find ways of providing protection against catastrophic illness and coverage of older age groups.

"6. Too many physicians have been isolationists within their communities. Local societies should encourage each individual member to participate in some civic undertaking. We physicians should be rendering health leadership in all service clubs, fraternal organizations, parent-teacher groups, church associations and unions.

"7. Every doctor must be brought to realize that good public relations begins in his or her office—that the way in which they treat patients reflects for good or ill on the entire profession. Medical societies are frequently hampered in their efforts to build public understanding by the doctor who overcharges, the doctor who rudely refuses to answer a night call no matter how urgent, or the doctor who keeps patients waiting for hours in his reception room without any explanation.

"8. There are some newspaper and radio people who honestly believe some of the untruthful charges which have been made against medicine. All county and state societies should make continued efforts to develop a close association with writers for press, radio and television.

"9. There is a need for unity within the profession. I have noticed a distressing regression toward petty internal wrangling, charges and countercharges, and divisive activities by various groups within the profession."

* * *

"A Cure for Doctor-Bill Fears." Several months ago, the *Woman's Home Companion* asked freelance writer Howard Whitman to do an article covering the doctor-fee situation. He worked with the A.M.A. in gathering much of his material. Later, Mr. Whitman remarked that he was amazed to learn what medical societies and individual physicians all over the country are doing to take the mystery out of charges for doctors' services.

At the suggestion of the A.M.A., Mr. Whitman interviewed physicians and their patients in various sections of the country. Result: an excellent article, entitled "How Much Should Your Doctor Charge?" The article appeared in the July issue of *Woman's Home Companion.* It is a fine report on what the article calls "a brand-new cure for doctor-bill fears."

* * *

Doctors Rated Last as Business Spenders. Physicians are rated last on the list of spenders for entertainment for business purposes, according to a study of members of the Diners' Club, a credit card system covering hotels, night clubs, florists, etc.

Advertising agency executives are the biggest spenders and a shade below are public relations men, closely followed by manufacturers' representatives and distributors and theatrical booking agents.

The Diners' Club is an organization of more than 100,000 members, whose cards cover some 3,000 establishments.

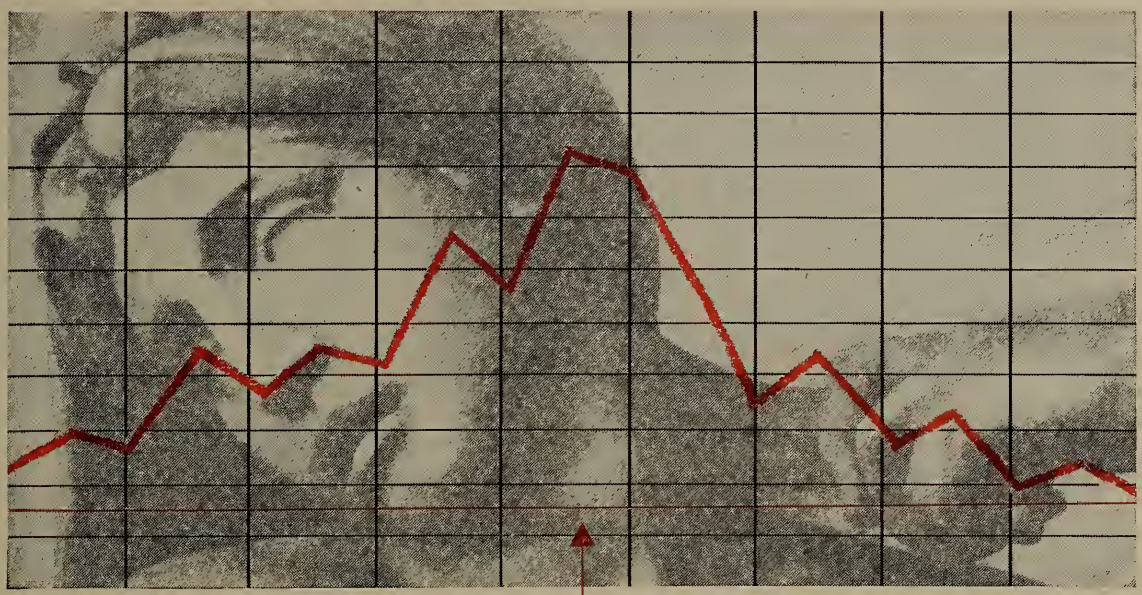
* * *

Survey Shows 87 Per Cent Oppose Socialized Medicine. Analysis of a cross-section of the 60,000 replies received in answer to 600,000 questionnaires sent out in the fall of 1952 by "A National Committee of Republican Voters" reveals that almost 87 per cent were opposed to the adoption of socialized medicine in the United States. More than 7 per cent were in favor of it and almost 6 per cent were against socialized medicine but in favor of some form of national health insurance.

Highly significant to the medical profession is the fact that even among those definitely opposed to socialized medicine, a substantial proportion of voters throughout the country expressed the opinion that some way must be found to protect the people, especially those in the middle income groups, against the unexpected costs of serious illness.

(Continued on Page 60)

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Otherwise the patient uses his own "available" nitrogen stores to accomplish the healing defect.[3]

The patient "is better off before his nitrogen stores have been wasted than after. Surgeons have long noted that chronically debilitated patients are poor operative risks."[1] Decubitus ulcers heal quickly in heavily protein-fed patients.[4]

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1. Howard, J. E. Protein Metabolism During Convalescence After Trauma. Arch. Surg. 50:166, 1945.
2. Co Tui, Minutes of the Conference on Metabolism Aspects of Convalescence Including Bone and Wound Healing. Josiah Macy, Jr. Foundation, Fifth Meeting Oct. 8-9, p. 57, 1943.
3. Whipple, G. H. and Madden, S. C. Hemoglobin, Plasma Protein and Cell Protein: Their Interchange and Construction in Emergencies. Medicine 23:215, 1944.
4. Mulholland, J. H., Co Tui, Wright, A. M., Vinci, V., and Shafiroff, B. Protein Metabolism and Bed Sores. Am. Surg. 118:1015, 1943.



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Secretary's Letters

(Continued from Page 56)

Distribute New Polio Publication to Physicians. The part that gamma globulin will play during the ensuing summer months, when the incidence of poliomyelitis reaches its peak, is explained in a fine, new medical publication which is now being distributed to physicians all over the country.

Since there will be a great demand for gamma globulin, the publication, entitled "Pediatric Clinics of North America," and containing nine definitive articles on polio, comes at a timely period. The introductory issue, prepared with the editorial assistance of the National Foundation for Infantile Paralysis, is being distributed free of charge by the W. B. Saunders Company, medical book publishers. The first regular issue is due in February 1954, and every three months thereafter.

One chapters deals with the "Distribution and Use of Gamma Globulin—a Statement by the Division of Medical Sciences, National Research Council." This chapter stresses the fact that the supply is "severely limited" and estimates that about one million average doses of gamma globulin will be available for the prophylaxis of poliomyelitis during 1953.

* * *

Physicians from virtually all of the 72 approved medical schools in the United States will be among the 600 doctors from all over the world who will attend the First World Conference on Medical Education to be held at the British Medical Association House in London, August 22 to 29.

After two years of planning by the World Medical Association, which includes a membership of national medical associations from 43 countries, the conference is destined to be one of the biggest and most important events in the history of medicine.

The conference is being sponsored by the World Medical Association in cooperation with the World Health Organization, a government agency; the Council of International Organization of Medical Sciences, and the International Association of Universities. It will be under the patronage of the Secretary of State of Scotland, the ministers of education and health for England and Wales, and the Chancellor of the University of London.

Many of the physicians from the United States who will attend the conference also are planning, while in Europe, to attend the Seventh General Assembly of the World Medical Association in The Hague, August 31 through September 7.

Dr. Louis H. Bauer, past president of the American Medical Association and secretary-general of the World Medical Association, termed the London conference on medical education "a major step in the international improvement of medical teaching."

significant development

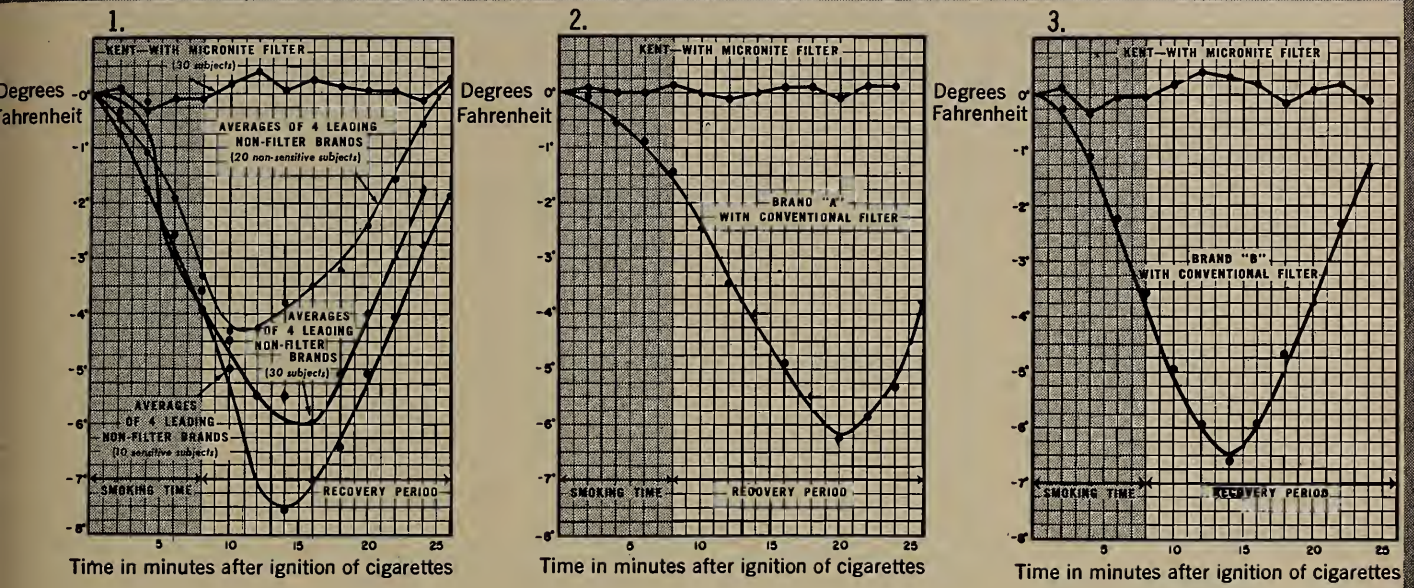
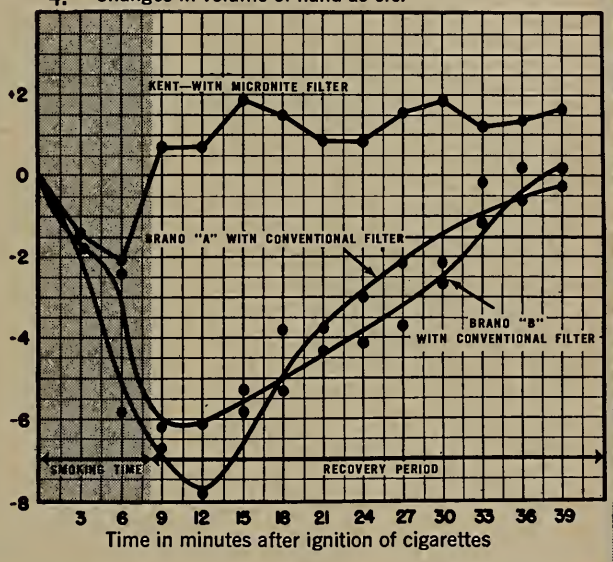


CHART 1. Comparison of KENT with leading non-filter brands. Effects on Peripheral Vascular System. Drop in surface skin temperature at the last phalanx induced by smoking one cigarette.

CHART 2. Comparison of KENT with Brand "A" conventional filter tip. Effects on Peripheral Vascular System. Drop in surface skin temperature at last phalanx induced by smoking one cigarette. Average for 15 susceptible subjects.

CHART 3. Comparison of KENT with Brand "B" conventional filter tip. Effects on Peripheral Vascular System. Drop in surface skin temperature at the last phalanx induced by smoking one cigarette. Average for 15 susceptible subjects.

CHART 4. Comparison of KENT with Brand "A" and "B" conventional filter tip. Peripheral vasoconstriction induced by smoking one cigarette. Peripheral blood flow as measured by continuous plethysmography on the hand. Average for 4 susceptible and 8 non-susceptible subjects.



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The problem of smoker susceptibility to tobacco irritants may be largely overcome by KENTs. And for those people whose smoking should be restricted for therapeutic reasons, *KENTs should be considered* as the cigarette of choice.



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References Cited

a. *A Manual of Pharmacology*, 7th edition, Philadelphia, W. B. Saunders Co., 1949, pp. 341-352.
b. *J.A.M.A.*, Vol. 103, 1934, p. 318.
c. *J.A.M.A.*, Vol. 135, 1947, p. 417.
d. *J.A.M.A.*, Vol. 104, 1935, p. 1963.

Unusual Case of Leukemia

An unusual case of leukemia in a victim who survived 29 years with the disease was reported in a recent issue of the *Journal of the American Medical Association.*

The case was described by Arthur A. Marlow, M.D., and Grant R. Bartlett, Ph.D., La Jolla, Calif. The disease was first discovered in this patient in 1923. Various forms of therapy were given him until his death in 1952, at the age of 74 years.

"The diagnosis of leukemia is considered a death sentence, and, in older age groups, it produces an unwarranted degree of fear on the part of patients with chronic leukemia as well as in their relatives," the California authors stated.

Although studies of large groups of chronic leukemia patients have shown the average length of survival to be approximately three and one-half years, "it is felt that an optimistic viewpoint is desirable in chronic leukemia, as the life expectancy of certain patients far exceeds that reported to be the average in large series of patients," they said, adding:

"Many individual patients can often be kept in happy, productive states for long periods of time by careful management."

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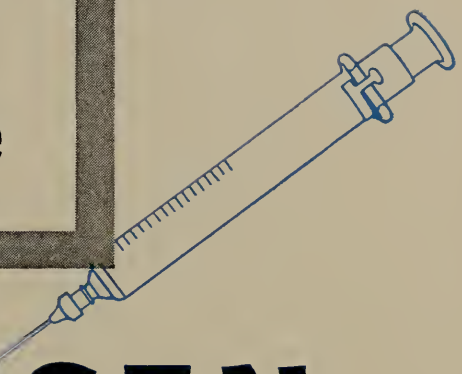
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Protoveratrine A & B	1:1	20
Commercial Alkaloid Preparation A	1.2:1	40
Commercial Alkaloid Preparation B	1:1	—
Commercial Alkaloid Preparation C	1:1	—

Unitensen has shown excellent results in clinical studies in hypertensive crisis, eclampsia, preeclampsia, and preeclampsia with underlying essential hypertension.

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Life Magazine Distorted Facts in Editorial—A.M.A.

The American Medical Association said today that physicians read with "amazement and resentment" the editorial, "Watch It, Doc," which appeared in a recent isue of *Life* magazine.

The editorial condemned the action of the House of Delegates. the policy-making body of the American Medical Association, for adopting a resolution pertaining to crippled children at the New York meeting early in June. The resolution was introduced by the delegates of the Indiana State Medical Association.

An editorial in a recent issue of the *Journal of the American Medical Association* said in part:

It is unfortunate that *Life's* editors apparently took neither the time nor the trouble to investigate the facts before sounding off on a subject so close to the hearts of millions of its readers.

Indiana was the first state to tell Washington to keep its general welfare money. pledging to carry on its own program without a 20 million dollar federal handout. This was brought about by the action of the state legislature in passing an anti-secrecy clause to reduce the rapidly rising cost of welfare in Indiana by opening the reports of the state's department of welfare to public view. This movement spread rapidly throughout the country, and it took an act of Congress to protect the various states from reprisals by the Federal Security Agency, which was then headed by Oscar Ewing.

The editorial gave a distorted picture not only of the position of the A.M.A. House of Delegates but also of the actions of the New York County Medical Society concerning the extension of medical care to a housing project proposed by the New York State Housing Commissioner. Judging from the reference to the medical care housing controversy, *Life's* writer must have been content to use only newspaper clippings and secondhand sources of information.

Life has violated one of the cardinal principles of good journalism—the accurate reporting of facts. The New York County Medical Society said in a letter to *Life's* chief editorial writer:

"*Life* repeated—with damaging effect—a quotation attributed to our chairman of the Committee of Medical Economics, which first appeared in the *New York Times* on April 7, 1953, about giving the patients 'breakfast in bed.' This was categorically denied to the *New York Times* on the same date but your writer, using only newspaper clips and not coming to the Society for his information, repeated the libelous phraseology and compounded it by going on to comment about Marie Antoinette and 'let them eat cake'."

If *Life* had taken the time New York and other newspapers did to check the facts behind the crippled children's resolution, an entirely different picture would have been unfolded. The facts underlying introduction of the resolution before the A.M.A. House of Delegates and the subsequent action by the House are in keeping with the demand of the public for a sensible form of government administration of various assistance programs. The resolution pertained to a regulation adopted by the Federal Security Agency in 1944 under Paul V. McNutt, Federal Security Agency Administrator, which reads:

"Section 200.9 of Part 12-4 of Regulations for Maternal and Child Health and Crippled Children's Program, entitled 'Crippled Children's Programs: Diagnostic Services.'

"State plans for Crippled Children's Services shall provide that the diagnostic services under the plan will be made available within the area served by each diagnostic center to any child (a) without charge, (b) without restriction or requirement as to the economic status of such child's family or relatives or their legal residence, and (c) without any requirement for the referral of such child by any individual or agency."

Before a state can obtain federal approval for its crippled children's program it must adopt this regulation or at least the sense of it. States are compelled to renew the crippled children's pledge set forth in the Federal Security Agency regulation every two years. With a change of administration in Indiana, a new welfare board was confronted with accepting the provisions by July 1, 1953, or failing to have the welfare program approved under the law. Eventually, Indiana's welfare board, under coercion, reluctantly approved the regulation for a two year period, but lodged a vigorous protest with Washington, saying the approval was being given under protest.

Life never touched on this background, nor does it appear to have consulted the Indiana Department of Public Welfare, which recently reported that the state's crippled children's program was costing the taxpayers almost nothing—thanks to a long-time arrangement with Indiana physicians who contribute their professional services. To *Life*, this apparently means nothing. Had the magazine checked its facts, it would have learned that Indiana's director of the crippled children's program recently praised physicians of that state for willingly treating deserving crippled children on other than a fee-for-service basis.

Life could have learned, too, if it had taken the time, that Indiana taxpayers are paying the physicians in the program an honorarium averaging only $40 per month or $480 per year for all professional services to crippled children in the state. For this amount, which totals less than $10,000 per

(Continued on Page 16)

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CREAM OR OINTMENT

Life Magazine Distorted Facts in Editorial—A.M.A.

(Continued from Page 10)

year, the children receive professional services that would cost more than $100,000 per year on a fee-for-service basis, according to the state's welfare department.

In reporting for the year 1952, the Indiana Department of Public Welfare's figures show that during the calendar year, Indiana physicians treated 2,844 children in clinics and made a total of 9,354 visits. In addition, 655 children received a total of 15,857 days of corrective hospital care by physicians, or an average of 24 days per child, for which the physicians received no extra pay for visits or services. Another 2,517 children received auxiliary orthopedic and therapy services in their home communities as a follow-up precaution to make sure that each child was being properly rehabilitated.

Such services to crippled children are not given in Indiana alone. Every Shriner hospital ward, orthopedic hospital, county hospital, and private hospital can certify to similar charitable services by physicians in every state in the union. It has never been the intent of the medical profession to remove the availability of medical care from those who are in need of care and unable to pay.

In introducing the resolution to the A.M.A. House of Delegates, Indiana physicians believed honestly and sincerely that whenever any law or regulation provides free service for all. regardless of economic status, and whenever the responsibility of control is removed from a state or local agency charged with the responsibility of administering and paying for the services performed, it definitely is a socialistic program.

It is significant that *Life* chose to ignore all the other resolutions acted on by the House of Delegates—many of them dealing with constructive and positive aspects of the American Medical Association's program—and elected to concentrate on one to which wide interpretation and speculation could be given. As Dr. Louis H. Bauer said in a letter to *Life:* "You took one resolution adopted by the House of Delegates and distorted the action of the House." He charged the magazine with exhibiting "either woeful ignorance or an unwillingness to accept fact."

Magazines and newspapers have ethics the same as the medical profession. In reporting on the A.M.A. action, *Life* threw the fundamental canons of journalism—sincerity, truthfulness, and accu-

(Continued on Page 26)

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Uniform Medical Care Proposed for all Military Dependents

A civilian advisory commission has recommended extending medical care to all military dependents, using private physicians and hospitals where necessary and charging dependents a token fee to discourage "running to the doctor for minor ailments, real or imaginary." The report was submitted to the Secretary of Defense.

Under current law, the commission explained, medical care is given dependents only at military installations where facilities are available on a "first come, first served" basis. This results in wide variation in benefits among the services and in various parts of the country. It is estimated that there are about 3,000,000 dependents. Approximately 60 per cent receive some medical treatment; under the commission's proposal all would be cared for either at military installations or by doctors and hospitals of their own choice.

The recommendation comes from the Citizens Advisory Commission on Medical Care of Dependents of Military Personnel, under chairmanship of Harold G. Moulton. It was appointed April 1, and has received testimony from representatives of the military services, veterans' organizations, and professional groups, including American Medical Association. Some of the commission's recommendations could be put into effect without legislation, but the major ones would require action by Congress.

The commission's report states in part:

"The dependent medical care system which the commission recommends should be regarded as an integrated whole. It is based on the principle that medical care for dependents—within prescribed limits—is sound national policy. It assumes that all dependents, wherever located, should be treated alike, and it holds the system should be uniform throughout all branches of the military organization.

"Congress should make an explicit declaration of policy with respect to dependent medical care in order that existing uncertainties and inconsistencies may be removed. The legislation should state what types of illnesses will be treated, whose dependents are eligible, and what types of dependents are entitled to medical care. It should stipulate that where medical facilities are not available, eligible dependents may utilize civilian doctors and medical facilities. The regulations required to ensure proper identification and to prevent abuses of the privilege should also be defined. The Military Services should be authorized to make budget provision for the estimated costs involved."

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Serious Bleeding Condition Aided by Transfusion of Blood Component

Transfusions of concentrated blood particles called platelets proved beneficial in many cases of thrombocytopenic purpura, a sometimes fatal bleeding condition, it was reported in a recent issue of the *Journal of the American Medical Association.*

Twenty-eight patients suffering from the affliction were administered from one to six such transfusions, according to Allen H. Minor, M.D., and Lee Burnett, M.S., New York. Given to control active bleeding or to assist in checking blood flow during surgery, a transfusion "usually was followed by a beneficial effect, which generally lasted from one to several days." they stated.

The patients, ranging in age from 2 to 69 years, were divided into two groups—those with a good prognosis and those with a poor prognosis. Clinical evidence of bleeding was present in each patient at the time of the first transfusion, despite attempts at control in many instances, the authors pointed out.

A complete check of blood flow was obtained in nine of those patients with a good prognosis and a partial check in three; two cases failed to respond to transfusions. In those patients with a poor prognosis, a complete check of the blood flow was obtained in six patients and a partial check in four; four cases failed to respond. More than one transfusion was given to 14 of the 28 cases.

Over-all evaluation of the effectiveness of transfusions of platelet concentrates showed them to be life-saving in five of the patients with a good prognosis, life-prolonging in two cases, and beneficial in six cases, the authors said. In those patients with a poor prognosis, the transfusions proved to be life-prolonging in four patients and beneficial in five.

"The composite experience reported here indicates that platelet concentrates are useful in the symptomatic control of thrombocytopenic purpura, regardless of the underlying cause," the article stated. "They have been of most value in cases in which critical bleeding was present or its occurrence was threatened but the ultimate prognosis was good.

"A platelet transfusion was used prophylactically as a preoperative measure in nine patients. In five it was the only transfusion given, and in four severe bleeding had first been controlled by previous platelet therapy. In all except one these transfusions were completely effective; at no time did the bleeding at operation cause the surgeon any concern."

Although some reactions were noted to the platelet transfusions, the possibility of such an occurrence does not appear to justify withholding of such treatment when it is indicated, the authors added.

Platelet transfusions are given in the same manner as ordinary blood transfusions. Several pints of whole blood are needed to obtain sufficient concentrates of platelets for a single transfusion.

Dangers from Vaporizer and Fumigator Devices Described

A warning against improper and excessive use of insecticide vaporizer and fumigator devices was issued in an editorial and a report by the Committee on Pesticides of the American Medical Association in a recent issue of the *Journal of the American Medican Association.*

The committee's report provided laboratory and clinical evidence of the risks attendant to improper use of these devices and the highly toxic material, usually lindane, that they disperse.

In spite of recommendations against the use of insecticide vaporizers in homes, sleeping quarters or where food can become contaminated, and their subsequent extension to other areas of use and related operations, "this type of insecticide volatilizing equipment continues to be advertised and promoted as safe and harmless for use in homes, hospitals, nurseries and similar unacceptable locations." the editorial stated, adding:

"The report of the Committee on Pesticides questions the wisdom and ethics of these promotional practices in view of the cumulating evidence of the dangers of insecticide vaporizers and fumigators in such environments."

According to the committee's report, dispersing insecticides into the atmosphere of buildings and other enclosed spaces principally for the control of flying insects is being exploited in a variety of ways. Among the methods which have health hazards are those concerned with heating, igniting or otherwise evolving vapors or fumes of chlorinated hydrocarbon insecticides.

"Opinion varies greatly as to the safety of vaporizing devices in human environment," the report stated. "Evidence in the majority of cases of injury suggests that defective equipment or other types of nonconformance with recommendations for use were primarily responsible; nevertheless, it is impossible to state that ill effects have not or will not result from properly operating devices used precisely in accordance with instructions.

"Extensive use of these devices has demonstrated that human beings can acquire a sensitivity to lindane."

The report pointed out that reactions to lindane, such as irritation of the eyes, skin and respiratory tract, have been brought to the attention of the medical profession. In addition, some cases of such serious conditions as anemia, asthma-like afflictions, tracheitis, and near-fatal total suppression of urine secretion by the kidneys have been suspected of being caused by exposure to lindane from these devices.

Some states and municipalities have passed laws controlling the use of vaporizers. As a result of such legislation, some manufacturers of such equipment

(Continued on Page 32)

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(Levin, S. J.: Ann. Allergy 11: 157-169, 1953; Case 6)

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PHYSIOLOGIC THERAPEUTICS THROUGH RESEARCH

Life Magazine Distorted Facts in Editorial—A.M.A.

(Continued from Page 16)

racy—out the window. In doing so, *Life* betrayed not only the physicians of this country but also its big family of readers. Good faith with the reader is a paramount principle. By every consideration of good faith, a magazine is constrained to be truthful. It is not to be excused for lack of thoroughness or accuracy within its control. So, in reply to *Life's* "Watch It, Doc," one can say "Watch It, *Life*."

Leukemia in Twins

Acute leukemia in fraternal twin boys, one of whom died at the age of 18 months and the other at 24 months, was described in a recent issue of the *Journal of the American Medical Association* by Dr. Jean V. Cooke, St. Louis, Mo. Only four other such cases have been reported in medical literature, it was added.

"Familial leukemia or those instances in which two and occasionally more relatives have suffered from the disease have been noted very infrequently," Dr. Cooke pointed out.



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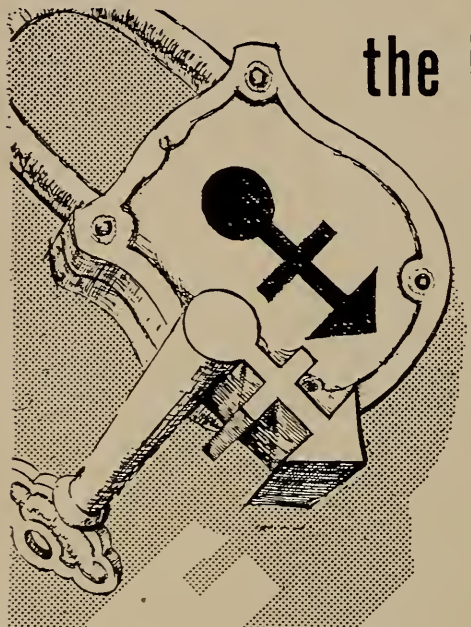
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*TRADEMARK

Dangers from Vaporizer and Fumigator Devices Described

(Continued from Page 22)

are exploiting them as fumigating devices, the committee's report said. Potential harmfulness through misuse of these fumigating devices far outweighs any recognized usefulness in homes, it added.

"Although existing restrictions have had a beneficial influence, it is generally recognized that they have only partially deterred many of the abuses associated with insecticide dispersing appliances," the report concluded. "Widespread misuse arising from improper installation and continued employment of unacceptable chemicals and equipment is still prevalent.

"The flamboyant and misleading advertising of certain of the more aggressive firms marketing these dispersers is mainly responsible for their continued widespread misapplication.

"The continued extravagant promotion of certain types of insecticide vaporizers under the guise of fumigating equipment is also of great interest to those responsible for protection of the public welfare. Insecticide fumigating devices are being advertised as portable, ornamental, deodorizing (chlorophyll), disinfecting (triethylene glycol), and useful for everything but healing purposes."

New Method of Suture Removal

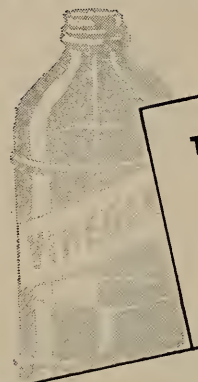
A new method for the quick, relatively painless removal of surgical skin sutures, by means of a "suture lift," was described in a recent issue of the *Journal of the American Medical Association* by Drs. Mandel Weinstein and Morton Roberts, Jackson Heights, N. Y.

The procedure is a very simple one. After the regular stitches have been made, a separate piece of nonabsorbable surgical suture is passed around the loop of the first stitch of the regular suture and tied. The thread is then passed under the loop of the second stitch and around the loop of the third. This procedure is repeated so that every other stitch is fixed to the "suture lift" by an extra turn of the thread.

When the regular stitches are to be taken out, traction upward on one end of the "suture lift" permits the fine thread of the regular stitches to be easily raised, cut and removed, the doctors wrote.

Removal of skin sutures is sometimes very painful because, during the normal healing processes of operative wounds, swelling may cause the suture to be so depressed and buried in the skin that delivering it for severance may be almost impossible, the authors stated. This is especially true if the incision is between skin folds or crease lines.

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Directions: To prepare vaginal douche add one teaspoonful of Pro-acet Concentrate to each quart of warm water and MIX WELL.

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Minor Surgery Relieves Varicose Veins; Exercise May Prevent Them

Minor surgery permanently relieves nine out of ten cases of varicose veins—but simple exercises may prevent them.

Anyone can have varicose veins, although they are usually found in a person who has a job that keeps him on his feet all day, especially a job that involves more standing than walking, according to Dr. John E. Eichenlaub, Champaign, Ill.

Whenever a vein in the lower leg is bigger than a lead pencil, medical treatment should be sought, Dr. Eichenlaub wrote in a recent issue of *Today's Health* magazine, published by the American Medical Association.

"Varicose veins slow up the circulation in the legs and let waste products pile up in the muscles of the feet and calves, causing an extreme feeling of tiredness, which goes on to severe muscle cramps," Dr. Eichenlaub stated.

"Varicose veins, with their ugliness, the discomfort they cause and the chance of eczema, ulcers or bleeding which goes along with them, should certainly be prevented if possible. But if they aren't prevented, they should at least be treated early."

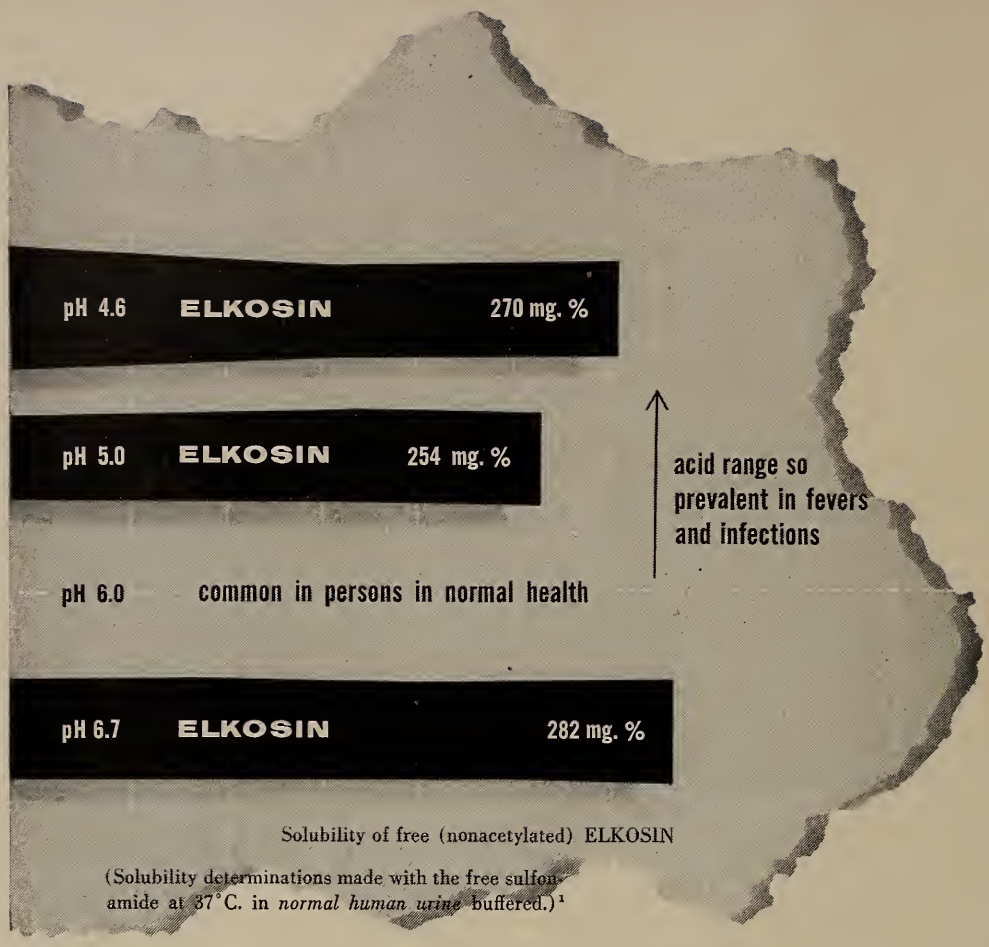
A simple corrective procedure consists of tying off the surface vein system of the leg where it enters the bigger veins, and making each branch clot by a series of injections of chemicals into them. This operation "gives good results at least nine times out of ten," he added. However, if this procedure fails to provide relief, more extensive operative treatment may be taken.

"There is one other approach to the varicose vein problem," Dr. Eichenlaub pointed out. "During World War II the army taught many of its recruits a leg exercise that was aimed at cutting foot fatigue. In the middle of each long hike, the soldiers were told to take off their shoes and socks, lie on their backs with their feet high above them, and jiggle their feet rapidly with the muscles relaxed. This exercise flushed out the veins and washed waste products out of the muscles.

"The same exercise would save many people from developing varicose veins if it were done whenever their feet and legs felt tired. Tired feet and legs usually mean congested veins. Both the tiredness and the congestion can be helped by this simple exercise. If congestion is never allowed to stretch the veins until their valves do not work, varicose veins will never develop."

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1. Ziegler, J. B.; Bagdon, R. E., and Shabica, A. C.: To be published.

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It's Your Job to Reduce Motor-Vehicle Deaths

Reduction of the ever-increasing motor-vehicle death rate is everyone's responsibility.

Most motor-vehicle accidents are avoidable, it was stated editorially in a recent issue of *Journal of the American Medical Association.*

"The person behind the wheel of the automobile is responsible not only to himself but to all others for observing all speed laws and traffic signs, for maintaining his vehicle in proper working order, and for making certain that he is in proper physical and mental condition to operate the vehicle," the editorial stressed.

"He must observe not only the road and persons directly ahead of him, but he must be cognizant of traffic and pedestrians on either side of and behind him. Pedestrians also are individually responsible for reducing the death rate from motor vehicle accidents. They must observe all safety rules and regulations designed for their protection.

"Only by assumption of such individual responsibility can the death rate from motor-vehicle accidents be reduced. Such accidents are unnecessary; they can and must be abated."

The editorial pointed out that physicians should proffer advice to patients who, they believe, should not operate a motor vehicle, as physicians are best informed about conditions which are contraindications for operating an automobile. Individual evaluation as to whether or not a person should drive an automobile should be made for persons who have just had certain types of physical examinations or who have just received an anesthetic; of persons taking certain drugs, such as antihistamines and sedatives; of persons with mental instability, uncontrolled diabetes, and certain forms of epilepsy; and of persons with heart disease or severe hypertension.

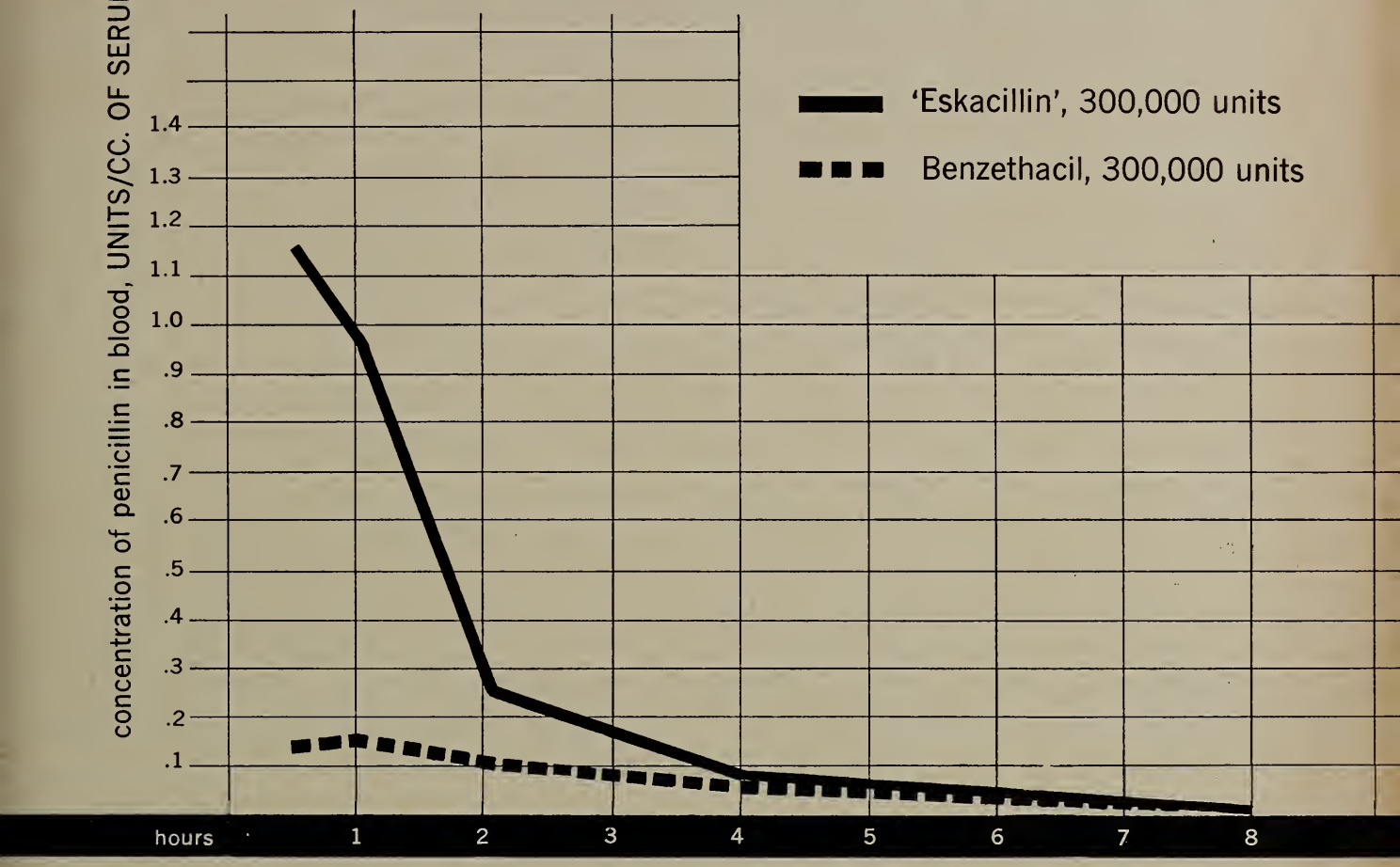
During the first five months of 1953, 14,230 persons were killed in motor-vehicle accidents in the United States, a four per cent increase over the 13,740 persons killed during the same period of time in 1952, the editorial said. In 1952, motor-vehicle accidents in the nation resulted in 38,000 deaths, caused injuries to 1,350,000 persons, and cost $3,750,000,000. There were 33,000 fatal accidents, 900,000 nonfatal injury accidents, 3,400,000 accidents causing property damage of $25 or more, and 5,200,000 accidents causing property damage of less than $25.

"It is ironic that with the millions of dollars and thousands of man-hours spent for medical research to prolong human life each year, almost a million persons sacrifice their lives and limbs through carelessness on the highways," the editorial stated. "Although the death rate from disease has decreased during the last decade, flagrant violations of highway safety rules have resulted in a constantly increasing death and injury rate from motor-vehicle accidents."

A comparison of the average serum concentrations in the same patients after a single oral dose . . .

(averages of a series of patients, oral fasting)

'Eskacillin' vs. one of the newer, highly insoluble penicillin salts



Source: Foltz, E. L., and Schimmel, N. H.: Antibiotics & Chemotherapy 3:593 (June) 1953

per teaspoonful — 5 cc. — *the 'Eskacillins'*

'Eskacillin 50'	50,000 units potassium penicillin G
'Eskacillin 100'	100,000 units potassium penicillin G
'Eskacillin 250'	250,000 units procaine penicillin G
'Eskacillin 500'	500,000 units procaine penicillin G
'Eskacillin 100-Sulfas'	100,000 units potassium penicillin G plus 0.5 Gm. of three sulfonamides (sulfadiazine, sulfamerazine, sulfamethazine)
'Eskacillin 250-Sulfas'	250,000 units procaine penicillin G plus 0.5 Gm. of three sulfonamides (sulfadiazine, sulfamerazine, sulfamethazine)

New Intensive Treatment of Epilepsy Is Described

A new form of intensive treatment of epilepsy, whereby the patient is kept in a profound state of unconsciousness for several days, was described in a recent issue of the *Journal of the American Medical Association.*

Following such therapy, 64 per cent of those patients previously unrelieved by standard drug treatment have been maintained seizure-free, according to Drs. Tracy J. Putnam and Sanford F. Rothenberg, Beverly Hills, Calif. The doctors are associated with the department of neurosurgery, Cedars of Lebanon Hospital, Los Angeles.

They reported on the results of a five-year study of 75 epileptic patients. All the patients first received the standard anticonvulsant drug treatment. One hundred per cent improvement following this form of therapy was obtained in 42 patients, 75 per cent improvement in three patients, and 50 per cent improvement in five patients.

The new form of intensive treatment was used on the 25 patients still unrelieved. This new therapy consisted of putting the patient in a profound state of unconsciousness by administration of massive doses of diphenylhydantoin (an anticonvulsant drug). If this did not produce a comfortable relaxation, paraldehyde or phenobarbital were given as a supplement. Glutamic acid and small, hourly inhalations of a carbon dioxide-oxygen mixture also were given to the patient.

A special diet was prescribed, and when the patient became too sleepy to eat or drink, intravenous injections of a glucose solution were administered to prevent dehydration. Antibiotics also were given to prevent infection.

The period of sleep usually lasted four days, and the entire treatment about two weeks, the doctors stated. Following such therapy, 16 patients previously unrelieved by the standard drug treatment were maintained seizure-free. Five patients improved 75 per cent and four patients improved 50 per cent; there were no failures.

Continuous special nursing care was provided during the intensive treatment period. Anticonvulsant drugs found most helpful were given to the patient upon awakening and for home use following recovery.

"While no patients in this series died, there certainly is some potential risk in the treatment," the doctors pointed out.

"Even in the most successful cases, favorable results may not be seen immediately. Sometimes there is an actual exacerbation of preexisting behavior disorders, lasting in one case as long as six weeks. Sometimes, also, an isolated seizure will occur within three months after treatment, then no more. Such cases are classified as successes."

A long period of freedom from attacks was followed by relapse in three cases, the doctors said. One patient has been seizure-free for four years since a second course of treatment, while repetition of treatment in another case only moderated the seizures. In the third patient, the attacks have remained under control for over a year.

Major Objectives for Mental Health Programs

A 13-point program on which individual state and county medical societies may base their mental health activities to further improve mental hygiene throughout the nation was outlined recently by Dr. Richard J. Plunkett, Chicago, secretary of the American Medical Association's Committee on Mental Health. The points are:

1. Study medical service plans to determine ways by which they may more effectively provide for treatment of mental and emotional illness.

2. Establish citizen groups for promotion of mental health education services.

3. Recommend to legislatures increased budgets for mental institutions.

4. Serve as a central office for dissemination of information on programs for mental health to the medical profession and public.

5. Expend efforts toward establishing psychiatric departments or services in general hospitals and increasing other psychiatric services in the community.

6. Recommend to legislative committees of state medical associations that changes or amendments be made in medical practice acts to include "mental illness" and "psychotherapy" as being within the legal definition and responsibility of the practice of medicine.

7. Improve facilities and level of professional care in state institutions for care of mentally ill.

8. Establish facilities for psychiatric consultation to courts and penal institutions.

9. Review and sponsor legislation for state mental health activities relating to problems of alcoholism and drug addiction.

10. Sponsor improved state laws for commitment to mental institutions, and provide for and encourage voluntary admissions to mental institutions.

11. Sponsor programs for postgraduate education of physicians in the utilization of psychiatric principles in the practice of medicine.

12. Sponsor programs in psychiatry and mental health in county society meetings during Mental Health Week in May of each year.

(Continued on Page 50)

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The calming, relaxing, and moderate hypotensive effect of Rauwiloid (a standardized alkaloidal extract from Rauwolfia serpentina), when combined with the more powerful hypotensive influence of Veriloid (a standardized alkaloidal extract from Veratrum viride), leads to a unique type of drug complementation. The patient's Veriloid requirement is decreased, side effects, if present, disappear, and a striking hypotensive response is produced. Not only are the diastolic and systolic pressures lowered significantly, but at the same time, the patient feels better, headache and dizziness disappear, and tachycardia, when present, is replaced by mild bradycardia.

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*Ford, R. V.; Livesay, W. R.; Miller, S. I., and Moyer, J. H.: Preliminary Observation of Rauwolfia Therapy of Hypertension, M. Rec. & Ann., in press.

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Major Objectives for Mental Health Programs

(Continued from Page 44)

13. Encourage the setting up of collaborating Committees on Mental Health in all county societies.

Dr. Plunkett pointed out that a survey of state medical societies has shown that many have already established committees on mental health or mental hygiene, and have active programs underway.

"Mental health is an acute problem," Dr. Plunkett stated. "The prevention of mental illness and the care of those already afflicted is everyone's responsibility, especially that of physicians.

"For many centuries, people just didn't talk about mental illness. Now that the subject has been brought into the open, many steps have been taken to improve the care of patients suffering from mental diseases, and to prevent mental illness. However, there is still a long road to travel, and to be successful, everyone's help is needed."

The Committee on Mental Health is the newest scientific group of the A.M.A. It was founded in 1952 to study and advise the association on all matters pertaining to psychiatry and the related field of mental health.

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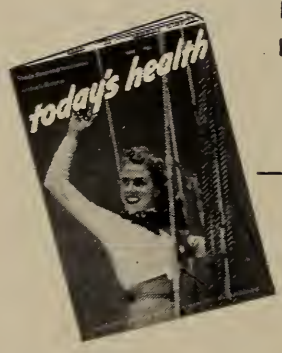
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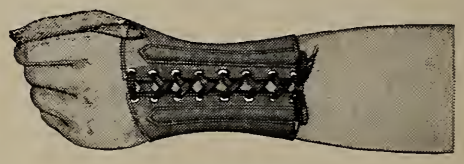
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Obstructive Urinary Tract Lesions in Children

EDGAR BURNS, M.D., New Orleans, La.

• Diseases that cause obstruction to the passage of urine in children almost always are owing to developmental defects. The most common site of obstruction in children, both male and female, is the neck of the bladder.

The importance of recognizing these conditions in the early stage of their development is emphasized by the fact that renal damage that may lead to failure occurs much more rapidly in children than in adults.

Symptoms are often insignificant. Recurrent or chronic infection in the urine should always be regarded as a warning sign. Investigation of the urinary tract in children is relatively easy, and with the improved methods of treatment now available, cure can be effected in virtually all cases in which irreversible changes in the kidneys have not occurred at the time of recognition.

OBSTRUCTIVE LESIONS of the urinary tract in children are almost entirely of congenital origin and are frequently associated with anomalies of the genital tract as well as of other unrelated parts of the body. They are located at the ureteropelvic junction, the ureterovesical junction, the neck of the bladder and the external urethral meatus. Occasionally obstruction is caused by ectopic position of a ureter.

Obstructions at the Ureteropelvic Junction

Obstructions at the ureteropelvic junction are of three general types: (1) high insertion of the ureter above the most dependent portion of the pelvis, (2) narrowing of the lumen of the pelvic outlet as a result of fibromuscular thickening of the ureteral wall in this area and (3) extrinsic bands with or without aberrant vessels impinging on the ureteropelvic junction. A mucosal valve located at the ureteropelvic junction may be added as a fourth type. Any combination of these may occur in a single case.

In most cases such lesions cause no symptoms while the child is young. As hydronephrosis develops, however, increased intrapelvic pressure causes pain, usually intermittent. Patients in whom infection develops have more symptoms and pyuria is usually persistent. The diagnosis is made by a complete study of the urinary tract. A hydronephrotic kidney can usually be palpated in a well relaxed child and palpation is perhaps more accurate if the child is lying on the abdomen. The location of the lesion is confirmed by roentgenographic study of the urinary tract. Intravenous or intramuscular urograms are diagnostic in many cases and may be supplemented by retrograde pyelo-ureterograms. Treatment is by the same kind of plastic procedures on the ureteropelvic junction as those carried out in adults, and destruction of a kidney as a result of hydronephrotic atrophy or pyonephrosis should rarely occur if the condition is recognized and treated early. The importance of early

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recognition is obvious if there is bilateral obstruction at the ureteropelvic junction or if the patient congenitally has but one kidney. It is important to determine whether or not the obstruction is bilateral, the amount of renal damage that has occurred and the presence or absence of other associated anomalies. A fused or "horseshoe" kidney is more liable to defective drainage than is a kidney that is normally situated. Hydronephrosis of clinical importance will develop in a few such cases. Surgical treatment entails division of the isthmus with lateral suspension of the lower poles of the kidneys combined with plastic reconstruction of the ureteropelvic junction or, in a few cases, removal of the hydronephrotic side.

Obstructions at Ureterovesical Junction

Obstructions at the ureterovesical junction are of two types: (1) ureterocele in which the obstruction involves only the mucosal orifice and (2) congenital narrowing of the entire intramural portion of the ureter. In the author's experience the former is chiefly unilateral and the latter bilateral. Damage to the upper urinary tract is in proportion to the degree of obstruction. Symptoms may be absent until severe hydronephrosis develops and may be initiated only by intervening infection. Ureteroceles are sometimes quite large and may obstruct the internal vesical orifice and cause acute retention of urine. In females a portion of the sac may be extruded through the external urethral orifice. The treatment of ureteroceles is simple. Opening the cyst with a cutting current and resection of the redundant mucosa is all that is necessary. In small children with large ureteroceles this is more adequately done through a suprapubic approach. Strictures involving the intramural portion of the ureter may be treated by ureteral meatotomy or by severing the ureter where it enters the posterior wall of the bladder and reimplanting it into a different position. The author's experience with ureteral meatotomy has been unsatisfactory in that in too many cases scar tissue caused new obstruction. Good results have so far been obtained from reimplanting the ureters. Reimplantation is carried out exactly as it is in adults. Children lend themselves remarkably well to the procedure and they usually are able to leave the hospital in two to three weeks.

Obstructions at the Internal Vesical Orifice

Obstructions at the internal vesical orifice in children are much more common than is generally recognized. In a few cases the obstruction is caused by a congenital prostatic valve. (The condition was noted in three of forty-five cases observed by the author in which open operation was done.) The obstruction may be caused by the valves alone or in conjunction with an enlarged verumontanum. Most obstructions at the internal vesical orifice in this age group, however, are caused by fibromuscular thickening in the area of the internal sphincter. There may be a complete contracture with involvement of only the posterior half of the neck of the bladder, simulating a prostatic bar in adult males. Obstruction of this type occurs about as often in females as in males. It is frequently associated with anomalies of the genital tract and in a surprising number of cases congenital absence of one kidney or some other associated anomaly has been observed. Not infrequently there are minimal symptoms or none at all until the upper urinary tract has become severely damaged, even to the point of irreversible renal failure. Frequency, straining, bed-wetting and overflow incontinence may occur. Any abnormal voiding pattern in a child should be promptly investigated. Infection is likely to occur and is usually persistent. Recurrent chills and fever are common. Infection added to the effects of back pressure increases the rapidity with which renal failure takes place.

Simple procedures are usually adequate to make the diagnosis. Intravenous urograms will indicate the functional value of the kidneys and usually any structural changes that have occurred unless the renal function has been severely damaged. Retrograde cystography is a most valuable procedure not only in establishing that there is obstruction at the neck of the bladder but also in indicating the amount of damage that has occurred as a result of the obstruction. One point that has probably not been emphasized as much as it should is that in many cases there is little residual urine even with a moderately dilated bladder. Recurrent or persistent pyuria is usual in such cases. A retrograde cystogram may be supplemented by cystoscopy but in most cases it is unnecessary. If the obstruction is recognized as early as it should be in the younger age group, the urethra is too small for insertion of an instrument that will provide adequate vision of the posterior urethra.

Surgical Treatment of Obstructions

Surgical procedures of two types have been used for the removal of obstruction at the neck of the bladder in children: transurethral resection and suprapubic or a modified retropubic approach. Transurethral resection has been widely used and is still a popular method in many medical centers. To the author, and perhaps to others, this procedure has not been uniformly satisfactory in small children. The urethra of a male infant will not accommodate an instrument of sufficient size to carry an adequate working element even with the aid of perineal urethrostomy. Hence, usually not

enough tissue is removed and repeated resection is necessary; and it should be emphasized that as long as any obstructive tissue remains, damage to the upper urinary tract continues and the urine if infected cannot be made sterile. Moreover, in small children transurethral instrumentation may cause urethral stricture. Transurethral resection may be quite adequate, however, for removal of obstructions in older children.

In 1948 the author started using a modified retropubic approach for removal of congenital obstructions of the neck of the bladder. In a child the neck of the bladder is higher in the pelvis than it is in an adult and is therefore easily accessible through an open approach. In the method used, the neck of the bladder is exposed through a low midline incision down to the symphysis. The bladder is opened immediately above the internal vesical orifice and the incision extended distally as far as is necessary to expose the entire posterior urethra even to the superior layer of the triangular ligament. All the obstructing tissue is easily removed by sharp dissection and the cut margins are approximated by a suture, which is usually adequate to control all bleeding. Only vessels from which blood spurts need be ligated. It is usually wise to cut completely through the wall of the bladder at this area in order to be quite certain that all obstructing tissue is removed. If the closure is adequate, there is no danger of urinary extravasation. Prostatic valves are destroyed by the high frequency current and enlargement of the verumontanum is treated in the same manner. The neck of the bladder is closed by continuous sutures and, unless the upper urinary tract has been decompensated by back pressure, drainage is accomplished by an indwelling urethral catheter, which is removed at the end of a week. If the patient has a large atonic bladder and especially if there is ureteral reflux, suprapubic drainage should be employed as long as is necessary to permit the upper urinary tract to return to normal. From six months to one year may be required. Children seem to tolerate suprapubic drainage remarkably well.

Results of Surgical Treatment

Forty-five children, 25 of them boys, were treated by this method. The only complication of importance was epididymitis which developed in one child after discharge from the hospital. The maximum duration of hospitalization was 18 days. Results were uniformly good in all 45 cases.

Pinpoint External Urethral Meatus

A pinpoint external urethral meatus is said to be one of the most frequently encountered obstructions of the lower urinary tract. However, the author has observed it less often than obstruction at the internal vesical orifice. Nevertheless, this simple obstruction can be of as much clinical importance as the latter lesion and cases have been reported in which renal failure has occurred. One of the most important features of a pinpoint meatus is recognition of its presence and the complications that can arise as a result of it. Treatment consists in meatotomy followed by passage of sounds. Since it is not unusual for a patient to have obstruction at more than one site—pinpoint meatus and obstruction of the neck of the vesicle, for instance—the urinary tract must be completely studied in all cases. Pinpoint meatus is not infrequent in females and can be quite as important as the equivalent condition in males.

Duplicated Ureters

Duplication is one of the commonest anomalies of the upper urinary tract. If the duplicate ureter opens in normal position at the lateral angle of the trigone and there is no obstruction, it is of no clinical importance. In a large proportion of cases, however, the duplicate vessel opens in an ectopic position, such as the posterior urethra, seminal vesicles, rectum, uterus, vagina, anterior urethra or Bartholin gland. In all such cases drainage is defective and there is hydronephrosis of the renal segment that is served by the ectopic ureter, most often the upper pole. If the duplicate ureter opens into the posterior urethra there may be no symptoms until, infection complicating the condition, the patient has pain in the renal area and recurrent chills and fever. Not infrequently in such circumstances chills and fever follow exercise. Usually in intravenous urograms the pelvis on the involved side appears to be normal but not in a normal relationship to the total renal shadow. In many cases the function of the involved segment of the kidney is reduced to the extent that the contrast medium will not concentrate in it, and the diagnosis then depends upon detailed search of the posterior urethra for the ectopic ureteral orifice. Frequently it can be located by injecting indigo carmine intravenously, then compressing the kidney bimanually during the search to force urine into the visual field. This method is useful, however, only if some degree of function has been maintained in the segment of kidney that drains through the ectopic orifice. Always when the orifice opens distal to the external sphincter there is constant dribbling of urine.

The history in such cases is characteristic. The child urinates at normal intervals and in normal amounts (indicating that there is a bladder and a competent external sphincter) yet is constantly wet.

The majority of patients observed by the author were girls. The ectopic orifice was more frequently seen in the posterior margin of the external urethral orifice than in any other location. Pyelo-ureterographic visualization of retrograde catheterization of the ectopic ureter will identify the kidney to which it is attached and show the amount of dilation of the ureter and the renal segment.

Treatment is surgical. In view of the fact that in duplicated pelves the upper pelvis serves only one-fourth to one-third of the total renal mass, resection of that portion can usually be accomplished with preservation of enough renal tissue on that side to support life even in the absence of the opposite kidney. In cases in which the involved segment of the kidney has maintained good function the ureter may be reimplanted into the bladder. This would be especially indicated in cases in which the lower pelvis is involved. Anastomosis to the adjoining ureter or implantation into the rectosigmoid colon is not to be considered in the management of ectopic ureters.

Dilated Tortuous Ureters

Another kind of obstruction is that which occurs from dilated tortuous ureters as a result of obstruction at some point in the lower urinary tract. After the primary obstruction is removed, dilated tortuous ureters have a tendency to return to normal length and diameter. On the other hand, if the obstruction has been complicated by infection, frequently periureteritis develops with adhesions between the loops of ureter that prevent the normal recuperative tendency.

Treatment consists in freeing the ureter, resection of the redundant portion (frequently as much as one-third to one-half of the entire length) and reanastomosis of the upper and lower segments. The urinary stream may be diverted by ureterostomy above the point of anastomosis or by nephrostomy.

Infected Urine

Infected urine is a frequent sign of an obstructive lesion in some part of the urinary tract. It is the usual practice in the majority of medical centers to make a complete study of the urinary tract after the second or third attack and such studies are mandatory in all cases of persistent pyuria. Intravenous urography in the majority of cases will supply all the information needed or it will indicate the necessity for supplementary studies. The contrast medium is tolerated almost entirely without reaction and a proportionately larger dose can be given than is ordinarily administered to adults, thus increasing the likelihood of obtaining diagnostic visualization.

A point to be borne in mind with regard to obstructions of the urinary tract is that in children there is in general good prospect for salvage. In many cases in which there seem to be irreversible changes, relatively normal function will be regained after adequate surgical treatment.

Prytania and Aline Streets.

Phenylbutazone: An Evaluation of Its Use

WILLARD G. SNOW, M.D., San Francisco

• Phenylbutazone (Butazolidin®), one of the newer antirheumatic drugs, while providing varying degrees of symptomatic relief in various types of rheumatism, may also cause serious toxic side effects. It is most effective in acute gout, and slightly less so in rheumatoid arthritis, of both the spondylitic and peripheral types. Its use in degenerative arthritis is not indicated. Its toxic side effects include gastrointestinal upsets, edema, rash, stomatitis, purpura, hematuria, agranulocytosis and reactivation of peptic ulcer. Several fatalities have been reported. It is, however, a valuable drug if used properly. Extreme caution should be exercised in selection of patients, in administration of the drug and in continuous observation of patients receiving it.

A GREAT DEAL of controversy has arisen around the newest of the antirheumatic drugs, phenylbutazone (marketed under the trade name of Butazolidin®) owing principally to the fact that it causes serious toxic side effects in some patients, although in most instances these effects are minor and rapidly reversible.

Phenylbutazone is a pyrazole derivative related to aminopyrine. It was first used as a solvent for aminopyrine to permit parenteral administration of that drug. Soon it was observed that phenylbutazone has potent antirheumatic properties of its own, and it has been used by itself for the past 18 to 24 months. In laboratory studies the drug was observed to have analgesic, antihistaminic and antipyretic properties, and to decrease capillary permeability.[6, 16, 20] It is rapidly absorbed when given orally, and somewhat less so when given intramuscularly. The highest concentration in the plasma after a single dose occurs in two hours when it is given by mouth, and in six to ten hours when injected intramuscularly.[3] One third of the drug contained in the plasma is strongly bound to the plasma protein. With repeated daily dosage the amount in the plasma is remarkably constant in each patient, but the level of constancy varies considerably between patients. It ranges from 60 mg. per liter in some cases to 140 mg. in others. When that level is reached, increased dosage does not increase the amount in the plasma, the excess presumably being rapidly metabolized and excreted. It is thought that sodium retention occurs when the content of phenylbutazone in the plasma reaches 50 mg. per liter, but there is no anti-inflammatory effect until a level of 100 mg. per liter is reached. When the drug is discontinued, it takes approximately seven to ten days for total excretion of it.[2, 3, 16]

There is no doubt in the opinion of almost all observers who have written about phenylbutazone that it provides varying degrees of relief of pain in a majority of patients with rheumatic diseases, and to a lesser degree decreases swelling and increases mobility of the affected parts. The relief usually occurs within two or three days after administration is begun and the effect is completely dissipated within seven to ten days after it is discontinued. It is important to recognize that phenylbutazone, like the steroids, has no curative properties.

The most dramatic effect of the drug is in acute gout, where it promptly brings about pronounced relief in 80 to 85 per cent of cases—sometimes complete remission within 24 to 48 hours. It is reported to be of value in maintenance therapy of chronic gout, but since there are other less toxic drugs, such as colchicine and probenecid, which are relatively effective in such cases, it is not recommended for routine use.[11, 16, 19, 21] Phenylbutazone is also very effective in relief of pain in nonarticular rheumatism, such as "painful shoulder" and bursitis, but remissions may not be as complete or lasting as in gout.[25]

In rheumatoid arthritis, 50 to 80 per cent of patients get varying degrees of subjective relief of pain. The drug seems to be slightly more effective in the spondylitic than in the peripheral type of the disease. There is some disagreement as to objective relief obtained by use of phenylbutazone, but in a review of the literature it appeared that some objective improvement was noted in about 50 per cent of patients.

Phenylbutazone is also effective in the relief of symptoms in degenerative arthritis in a smaller proportion of patients, but its use in this disease is not ordinarily advised because of the age of the patients (for reasons stated below). It may be said that

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Part of a Panel Discussion on Gout and Arthritis, presented before the Section on General Medicine at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

the effectiveness of phenylbutazone in the treatment of chronic rheumatic diseases is roughly inversely proportional to the duration of the disease.[12, 16, 22, 25, 27, 28, 32]

Toxic reactions occur in about 25 per cent of patients receiving phenylbutazone, but only in about 10 per cent is it necessary to discontinue administration. The common reactions are gastrointestinal upset, edema and rash. Less common is the occurrence of more generalized allergic reactions with stomatitis, purpura, hematuria and agranulocytosis. Several patients have died of agranulocytosis. Reactivation of preexisting peptic ulcer has occurred, and several cases of unexplained gastrointestinal bleeding have been reported.* Another reaction not reported, which the author has observed, is moderate to pronounced increase in blood pressure, with or without obvious edema. One investigator reported the occurrence of optic neuritis during the administration of phenylbutazone, but the status of the case is as yet not well defined.[7]

From the foregoing it is obvious that the value of phenylbutazone in the relief of symptoms of rheumatic diseases is now generally accepted, and that the drug sometimes causes undesirable and occasionally serious side effects. However, it is for use in dealing with a group of diseases which are notably difficult to control and, as yet, impossible to "cure," and for which there are relatively few effective drugs. Certainly, the incidence of toxic reactions to gold is almost as high as to phenylbutazone, and the dangers just about as great, although when gold is effective the improvement is prolonged. The use of steroids, corticotropin (ACTH) and cortisone, causes almost as many immediate side effects and no one knows what the really long term administration of them will produce. Physicians continue to use these drugs, but with great care. The author believes that the same should apply to the use of phenylbutazone; that both the good and the bad features of the drug should be recognized and constant vigil kept for the development of known and unknown side effects.

The following recommendations are offered:

Phenylbutazone is a valuable adjunct to the armamentarium available in the treatment of rheumatic diseases, but it is also a potentially dangerous drug and must be treated as such. Whether the drug should be used or not depends upon the real need for relief provided by it, balanced against the danger of possible toxic reactions. Certainly it should not be used in cases in which other less toxic drugs will provide as adequate, or nearly as adequate, relief.

Phenylbutazone should not be given to patients with a history of peptic ulcer and it should be used with great caution, if at all, in patients with a history of allergic reaction to drugs. In patients over 60 years of age and in others with known cardiac disease, or any disease complicated by edema, the intake of sodium should be restricted, if phenylbutazone is to be given at all.

Dosage of the drug should obviously be kept at a minimum;[9,13] never should it exceed 800 mg. daily.[12] It is now quite clear that larger dosage does not increase effectiveness. In some few cases, adequate relief can be obtained with doses of 100 mg. daily, or even less.

The drug should be taken with food, or with an anti-acid preparation that contains no sodium, to minimize gastric irritation. If the patient is given adequate amounts of phenylbutazone yet has no relief of symptoms within four to seven days, administration should be discontinued, for it is extremely unlikely that any improvement will occur. Patients should never be given prescriptions for large amounts of the drug, lest they neglect regular visits to the physician.[10]

The blood should be examined before administration of the drug is started, at frequent intervals during the institution of treatment, and regularly thereafter as long as therapy is continued. At each visit to the office, the physician should weigh the patient,[9] determine the blood pressure, and question him as to subjective symptoms. The author also believes that when phenylbutazone is given to a patient with a chronic rheumatic disease, he should be fully informed as to its lack of curative properties and its potential toxic effects, so that he can better cooperate with the physician.

In general, phenylbutazone should not be used by a physician who is not willing, or able, to accept the responsibility of careful continuous observation of each patient receiving the drug.

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Anoxemia and Brain Disease

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• The author advances the concept that anoxemia, either in its general or restricted form, or both, is probably responsible for a considerable portion of "degenerative diseases," whose etiologic delineation has not yet been traced. It is necessary, he believes, to enlarge greatly the comprehension of the disordered circulatory states to include oxygen want and thereby account for a number of conditions hitherto considered to be of unknown cause. More than this, he finds in oxygen want an explanation of the mechanism of a number of individual lesions or details of lesions otherwise not well understood. The author believes it is very likely that an understanding of cerebral anoxia in its ultimate ramifications will open still wider doors to the understanding of certain clinical syndromes the cause of which remains obscure.

IT HAS BECOME a fundamental doctrine in medical science that the most direct approach to a problem in prevention and treatment of a given disease is by way of knowledge of the cause. The earliest concepts regarding treatment were best crystallized with respect to traumatic lesions, for it was not difficult to reason from cause to effect in these circumstances. In the case of fractures of the skull, the first surgeons soon appreciated the necessity of elevation of depressed fragments and of providing drainage for complicating intracranial hemorrhage. It was possible to understand the significance of a simple tumor formation as a space-occupying element which made functions awkward because of its mass. But it was a long and barren era between the period of the Greek and the Roman physicians who practiced medicine at the beginning of the Christian era and the time of Pasteur and Lister, for in all that time there was no way of knowing the meaning of what came to be called "laudable pus." And the surgical arts had only half a century to learn to deal with suppurative lesions before the age of antibiotics had set in. Neurosurgeons had not yet, either collectively or individually, attained the percentage of cures achieved by Macewen, before the problem of abscess of the brain was almost completely wiped out by the introduction of penicillin. And what could now be a better answer to therapy of malignant gliomas than to know something of the basic nature and means of evolution of the lethal seeds that stimulate them to grow?

Medical students are early taught that human disorders are either congenital (or hereditary) or acquired, and that if acquired they are of traumatic, infectious, vascular, toxic, metabolic or neoplastic nature. The degenerative diseases are usually put in a special class since, by and large, they cannot readily be accounted for.

MEDICAL HISTORY AND ETIOLOGY

One need go back only a little more than a century to the time of Cruveilhier[13] (1829-42) to trace the short history of useful knowledge with respect to the causes of cerebral disease. The magnificent lithographs of meningiomas and metastatic tumors, hemorrhages and softenings, meningitis and abscess—yes, even of multiple sclerosis—as portrayed in his atlas, make it perfectly clear that the common entities of nervous disease were definitely recognized. But Cruveilhier and his contemporaries often confused primary with secondary growths, and even mistook fungus cerebri for sarcoma of the skull because all tumefactions which eroded the skull were in their day designated as "tumeurs fungueuses" in keeping with the tradition of Antoine Louis established half a century before. Granulomas were confused with true neoplasms, and infection of the middle ear was considered secondary to the abscess in the brain, thus interchanging the etiological cart and horse. But the introduction of the microscope helped solve the problem of classification of tumors, and the test tube ultimately distinguished between purulent and granulomatous lesions. The discovery of the spirochete further opened up the door to knowledge of the kaleidoscopic aspects of syphilis, and appreciation of the nature of arteriosclerosis soon brought explanation of the most common of encephalic lesions—the vascular ones.

Somewhat less conspicuous among his famous gallery of lesions were Cruveilhier's depictions of brains with partial and irregular atrophy, lesions that already had been described by his compatriot, Cazauviehl (1827).[4] With the passing decades, there

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was added, one by one, congeries of bizarre, divergent and baffling lesions which now constitute the last group of diseases of unknown or uncertain cause. These traditionally have been considered "degenerative" in nature. Among them are cerebral atrophy —generalized, hemispheral, lobar or convolutional —a smaller group of central disorders, including cystic degeneration and the demyelinizing diseases, and a still more circumscribed group of ganglionic lesions, most of which may be included under the euphonic terms *status marmoratus* and *status dysmyelinisatus*. Since these lesion-complexes (for they are by no means isolated structural entities) are now known to be intimately associated with epilepsy, cerebral palsy and mental deficiency, interest has developed anew in their genesis (Courville, 1950, 1952).[9, 10]

ETIOLOGY OF "DEGENERATIVE DISORDERS" OF THE BRAIN

Since Virchow (1867)[32] applied the term *infantile encephalitis* to one of this group (infantile cystic degeneration of the brain) some eighty-odd years ago, these various diseases have been more or less critically studied by many earnest students of cerebral disease. Different investigators have variously ascribed them to hereditary deficits, infections (encephalitis), specific or non-specific degeneration, vascular disorders, and finally birth trauma—the possibilities entertained depending upon the particular viewpoint of the investigator: whether he was most impressed by the occasional familial incidence, or the not infrequent history of dystocia, the collections of lymphocytes in the meninges and brain, the overgrowth of neuroglia or the vascular alterations within the lesion itself. In retrospect, it is somewhat amazing that these various facets of the problem could strike the individual investigators with such divergence. But it is not so surprising that some common cause was not suspected which would serve to unify so widely differing lesions on one etiological basis.

THE CONCEPT OF NEONATAL ANOXIA AS A CAUSE OF DEFORMING CEREBRAL LESIONS

The year following the appearance of the final folio of Cruveilhier's justly famous Atlas, an English surgeon named Little (1843)[18] reported a series of clinical observations on crippling deformities of the extremities in children and asserted that cerebral palsy was traceable in many instances to asphyxia at birth. Although these articles were reprinted in book form a decade later[19] and again as a separate report in 1861,[20] the seed he thus sowed fell on stony ground. Even a resowing of the idea by so illustrious a physician as Osler (1899)[27] did not come to harvest.

Instead, investigator-physicians became more and more impressed with the repeatedly told story of difficult delivery, and "birth injury" in its mechanical aspects came to be charged by one school with the responsibility for at least some of these lesions. This concept was brought into clear focus by the masterful studies of Schwartz (1924, 1927)[29, 30] who demonstrated what dystocia could do to the skull, the dura and the brain. Others have continued to point out this association, for example Norman (1944, 1947, 1949)[24, 25, 26] of England, and Benda (1945)[2] and Malamud (1950)[22] in this country. It remained to be shown that it was not the mechanical effects of dystocia that produced the residual lesions, but rather the respiratory failure consequent to increased intracranial pressure which, through resultant anoxemia, was actually responsible for these results (Courville and Marsh, 1944).[11]

A review of pertinent literature has brought to light much that supports this thesis. Grinker (1925)[15] suggested the similarity of the lesions in the demyelinizing diseases and disintegration of myelin after asphyxia from carbon monoxide poisoning. Others (Jedlowski, 1938;[17] Hurst, 1940;[16] Lumsden, 1950[21]) have seen resemblances between the central degenerations after cyanide poisoning and these same diseases. Some observers, noting the associated vascular changes in these conditions, attributed their genesis to some circulatory disturbance, and Morrison (1946)[23] concluded that the disturbance is caused by anoxemia.

If, indeed, unusual and divergent conditions such as Schilder's disease and status marmoratus can be explained on the basis of oxygen want, is it surprising that cerebral atrophy, both general and local, should result from this process? The experimental production of similar atrophic changes (Windle and Becker, 1942, 1943[33, 34]) by deprivation of oxygen to the fetal brain of animals on the one hand, and the observation of acquired lesions essentially identical to those of lobar atrophy of childhood (Friedman and Courville, 1941) on an ischemic basis (Spatz, 1926[31]), would seem to support this assumption.

If all this proves to be true, why is it that there has been so long a wait for an answer as to causes of these disorders, particularly since this group of lesions has been subject to the most critical inquiry? The difficulty has been, not that the various details of these diseases were not recognized; it lay in the fact that the various evil potencies of anoxemia for tissue damage were not understood. It did not occur to investigators that a key to the situation was at hand in the form of focal loss of nerve cells in the cerebral cortex (Herde), which is now recognized to be the characteristic effect of oxygen want,

whether generalized (anoxemia) or limited to the distribution of a given vessel (ischemia). It is also a fact that only recently has it come to be understood that the action of the cyanides in particular is dependent upon their interference with cellular oxygenation. Again, it was further not appreciated that the primary anoxemia sets up a chain reaction in the cerebral blood vessels, resulting in secondary vasomotor disturbances that accentuate, prolong and often localize the original effects of lack of oxygen. Only with this information at hand was it possible to explain certain delayed effects, such as demyelinization, which occurred long after the causative anoxic episode had taken place. Nor was it appreciated that even some tertiary effects (as for example, gliosis, status marmoratus, macrogyria) could occur as a consequence of destruction of inhibiting cells, tissues and structures. Once these truisms were grasped, it was but a step to apply them to the group of structural disorders whose genesis had hitherto been shrouded in mists of uncertainty.

ANOXEMIA AND OTHER CEREBRAL LESIONS

In view of experiences with the more profound degrees of anoxia after nitrous oxide anesthesia (Courville, 1936, 1938, 1939[5, 6, 7]), and with a full understanding of the vital necessity of intact cerebral circulation, the cortical and ganglionic alterations found after severe degrees of shock, prolonged cardiac standstill, and exsanguination are also properly understood as actual manifestations, albeit of different mechanisms, of anoxemia. And with a wider comprehension of the role of oxygen in the metabolism of nerve cells, the cellular and architectural changes consequent to hyperthermia (excessive demand for oxygen) and hypoglycemia (lack of glucose in the presence of abundant oxygen) are to be interpreted as disturbances in internal respiration, a form of anoxemia.

What other problems concerning brain disease does this information aid in solving? In the first place the mechanism of an entire group of lesions characterized by new formation of capillary blood vessels in the cerebral cortex becomes lucid. It is very likely that the focal red softenings in certain syphilitic disease (Huebner's syphilitic endarteritis), the circumscribed cortical scars in arteriosclerosis, the focal cortical lesions in rheumatic disease and pneumonia, and the cortical and ganglionic alterations in a whole bevy of poisonings with heavy metals, the alkaloids and hypnotic drugs, are to be accounted for by local circulatory changes leading to partial softening of the tissues. It is possible also that the secondary vascular lesions of the brain stem of alcoholic encephalitis belong in this same category. In gross vascular diseases it seems certain that local ischemias are responsible for these specific lesions. In the case of intoxications, it is suggested by histological findings that the noxious effects are felt by the endothelium of the blood vessels as well as by the nerve cells and that in event of occlusion of the capillaries incident to swelling of the endothelium, focal thrombosis or even hemorrhage and focal ischemia results, causing secondary softening which leads in turn to endothelial proliferation. These changes are also significant when they occur in the corpus striatum (as in barbiturate poisoning and lead poisoning) because of the known sensibility of this structure to oxygen want. The recent suggestion that Wilson's disease is a consequence of a disturbance of copper metabolism may account for both the attendant cortical and ganglionic lesions through some change in the blood vessels with secondary ischemia. It is, moreover, quitely likely that the alterations in the individual nerve cells in a number of exogenous intoxications (alcohol, barbiturates and narcotics as well as the cyanides) are actually the result of an interference with cellular oxidation (histiotoxic anoxia).

There are other clinical entities which possibly are owing to the effects of anoxia in one form or another. Some instances, at least, of mental deficiency (Berry, 1928[3]), idiopathic epilepsy (Nielsen, 1945; Courville and Nielsen, 1953[12]), certain of the psychoses (Batten and Courville, 1940[1]), some neuroses (Fletcher, 1945[14]), behavior disorders (Preston, 1945[28]), juvenile parkinsonism, and possibly some of the so-called abiotrophic and degenerative diseases of later life as well, may have their beginnings in long-forgotten paranatal anoxia. The reasons for these assumptions have been given elsewhere (Courville, 1950.[9]).

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Treatment of Intraoral Carcinoma

Combined Resection of the Jaw and Radical Dissection of the Neck

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• Intraoral carcinomas first occur as primary growths. From these sites they spread by the lymphatics to the regional nodes. In the past, treatment of these lesions has consisted of radiation therapy for the primary lesion, followed by radical neck dissection. The results of this treatment have not been satisfactory. On the other hand, for carcinoma elsewhere in the body the results of surgical extirpation of the primary lesion, of the intervening lymphatics and of the regional nodes at the same operation has given much better results.

In the past few years an attempt has been made to improve the results of treatment of intraoral carcinoma by removal in continuity of the primary lesion, intervening lymphatics and regional nodes. The improvement in anesthesiology, electrolytes and fluid balance, blood replacement, and the development of the antibiotics, in conjunction with the realization that the cosmetic deformity is not as great as might be expected, has led to this development. In those centers where it has been possible to apply this principle of treatment to intraoral carcinoma the results have been very encouraging.

ANY RATIONAL TREATMENT of intraoral carcinoma must be based on a sound understanding of the natural history of the disease. At their inception, all such lesions are microscopic in size. They are confined to the area of the first appearance and remain there an indeterminate time, finally metastasizing. This spread takes place at different stages of growth depending on the type and grade of tumor. The path of spread of a primary intraoral lesion beyond the site of origin takes place with such a regularity of pattern, in almost all cases, that it is predictable within a narrow range of error. From a lesion located definitely to one side of the midline, as most are, extension is almost always to the cervical lymph nodes on the same side. Very rarely, metastasis to the opposite side occurs.

Once present in the nodes, the carcinoma will be confined there for a variable period, again depending upon its rate of growth. If untreated, or inadequately treated, the disease will finally spread beyond the limits of the cervical lymphatic system and kill the patient. Obviously, with a means of therapy that would eradicate the primary lesion, the regional lymph nodes, and the intervening lymphatic channels at the same time, before the disease became inoperable locally, more patients with intraoral carcinoma could be successfully treated. Indeed, that is a fundamental principle of surgical treatment of cancer.

In postmortem examination of patients who died of intraoral carcinoma, it was observed that the disease in at least 80 per cent of cases remained confined to the limits of the head and neck.[1, 10] Death in those cases was caused by inanition, hemorrhage, respiratory distress, or infection. In only a very small minority of cases was spread of the disease to distant areas noted at autopsy—a stirring challenge to physicians treating intraoral carcinoma.

With that principle followed in abdominal perineal resection for cancer involving the intestinal wall, various investigators have reported five-year "cure" rates of 65 per cent,[3] 43 per cent[4] and 90 per cent[6] in cases in which there was spread beyond the serosa but no palpable lymph nodes. The "cure" rates in cases in which there was lymph node involvement were 20 per cent, 23 per cent and 37 per cent, respectively. The five-year survival rate after the standardized radical mastectomy (based on the same principle) when performed in cases where no regional nodes were palpable was 81 per cent,[6] compared with 59.3 per cent in cases in which the lymph nodes were involved. As to results of treatment of cancer of the bucca, gingiva, tongue and floor of the mouth, the five-year "cure" rate has been variously reported as from zero to 20 per cent in cases in which adjacent nodes were palpable and from 28 to 50 per cent when there was no clinical evidence of extension to the nodes.[7, 8, 11]

Since intraoral cancer certainly is no less accessible than cancer of the breast or of the lower gastrointestinal tract, question arises as to the inferior results of treatment. It has been promulgated, by oncologists, that the greatest part of the answer can be found in the method of treatment that has been

used for intraoral cancer: In almost all cases, radiation to control the primary lesion, then, four to eight weeks later, radical dissection of the neck on the side of the lesion, in some cases because metastases were present and in others as a "prophylactic measure." Thus, the previously mentioned basic principle of surgical treatment of cancer has been violated.

The lymphatic channels between the primary site and adjacent nodes cannot be ignored. Channels from the tongue, the floor of the mouth, the alveolar ridge, and the buccal mucosa pass into the periosteum of the mandible and some of them enter the bone, and tumor cells that remain within them can progress to any of those sites.

In an attempt to solve these problems of intraoral carcinoma, combined jaw resection and neck dissection in continuity has been increasingly performed in the last five or six years. The en-bloc removal of the primary intraoral lesion, the intervening lymphatic channels and the regional nodes was known many years ago. But the mortality rate incident to the operation was high and, what with the rapid advances that were made in roentgenologic technique, radiation became the treatment of choice. Now, however, increased knowledge of fluid and electrolyte balance, blood replacement and the use of antibiotics has made possible the performance of so radical an operation with very low mortality.

The technique of the procedure for removal of a primary lesion, the regional nodes and the intervening lymphatic channels has become rather well standardized, and description of it in great detail may be found in any of several papers.[2, 12] For a carcinoma of the tongue, half the tongue and the floor of the mouth on the involved side, as well as the mandible and all lymphatic and node bearing tissue on that side of the neck, must be removed. For a clean dissection this will include all tissue removed in a standard radical neck dissection as outlined by Martin.[9]

The procedure is not so deforming as might be thought. There is some flattening of the face on the side operated upon, but if the remaining mandible is immobilized in the proper plane of occlusion for six to eight weeks, until scar contracture has occurred, it will be maintained in a relatively normal position and not pulled grotesquely to one side. Ability to open and close the jaw and to masticate acceptably can be expected.

The worth of any procedure in the treatment of carcinoma is measured by the results. Reports by surgeons who have done the operation on many patients indicated that five-year "cure" can be expected in 40 to 60 per cent of cases.[9, 12] These reports are the more remarkable in that they are based on the results obtained in quite advanced cases. As would be expected, combined jaw resection and neck dissection was first applied only when there appeared to be nothing to lose. In light of the results in such cases, indications for use of the operation in more favorable circumstances are constantly being extended. Some physicians feel that the problem of intraoral carcinoma should be approached with the same attitude as is carcinoma of the breast. In dealing with mammary cancer, surgeons do not hesitate to remove the primary lesion, the intervening lymphatic channels and the regional nodes with sacrifice of all associated tissue, even in cases in which there is no clinical indication of involvement of the nodes.

At present the philosophy of combined jaw resection and neck dissection and the indications for the operation are in a state of development and flux. Physicians most familiar with the problems of dealing with the condition are rather generally agreed that the procedure should be applied if there is enlargement of the nodes in the neck. The final status and application of this procedure will have to be developed in centers where there are many cases and enough data for statistical analysis can be collected in a relatively short time.

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Diagnosis and Treatment of Gouty Arthritis

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• *The characteristic phenomena of acute gouty arthritis are acute arthritis in a middle-aged male, associated with serum uric acid above 6 mg. per 100 cc. and a satisfactory response to colchicine. Roentgenographically observable changes do not occur early.*

In recent years uric acid metabolism has been studied by means of isotope techniques utilizing labeled substances. Uric acid is excreted in relatively constant amounts by humans and is little affected by variations in dietary intake, except for purine or nucleic acid substances. Persons with gout have a greater total amount of uric acid and a lower turnover than normal persons.

In the treatment of acute attacks of gout colchicine is still the most practical single drug, even though its pharmacologic action remains unknown.

Benemid (probenecid) is a powerful uricosuric agent of low toxicity which has been subjected to extensive clinical trial for three years. It causes inhibition of the resorption of urate from the glomerular filtrate; the site of action is believed to be the tubular cells. The author's usual dose is 2 gm. a day. This has caused a lowering of the uric acid in the serum and an increase in the urinary output.

AN ADEQUATE UNDERSTANDING of the approach to the diagnosis of a clinical entity and an effective regimen of therapy should be based upon accepted concepts of normal and abnormal function. Diseases that are identified as metabolic disturbances serve as good examples. Although gout is not the example par excellence, a clinical discussion of this dyscrasia may be developed from accepted physiological and biochemical phenomena.

The clinical finding of acute arthritis associated with the cardinal signs of inflammation in a male should suggest gout as one possibility. If it is present the amount of uric acid in the serum will be above 6 mg. per 100 cc., and if a "full course" of colchicine is administered, the acute articular symptoms should subside. These items—a characteristic clinical picture, an elevation of serum urate and a satisfactory response to colchicine—constitute the triad of acute gouty arthritis. Elaboration and extension of these phenomena will constitute the basis of this discussion.

The initial attack of acute gouty arthritis usually appears in the middle decades of life but it may appear as early as the first decade or as late as the eighth. The disease affects males predominantly; fewer than five per cent of patients are females. So infrequently does the disease occur in females that a clinician must exercise unusual acumen in making a diagnosis of gout in a female if subcutaneous tophi have not developed. About two-thirds of a series of patients observed by the author had a family history positive for gout. This datum frequently is helpful in diagnosis during the earlier years of the disease if stigmata of the well-developed case of gout are lacking. Acute attacks are likely to affect the metatarsal-phalangeal joint of the great toe, but they may involve any joint or joints in the upper or lower extremities. If the central joints of the body are afflicted, tophaceous deposits usually have developed and the diagnosis is not in doubt.

Acute gouty arthritis may appear following the impact of one of several precipitating agents or it may appear spontaneously. An acute infection, a surgical operation, meteorologic changes, emotional turmoil, one of several drugs which include a mercurial diuretic and antibiotics, particularly penicillin and the vitamin B preparations administered parenterally, have been so implicated. The suddenness in onset and the severity of pain in a previously asymptomatic male are typical. Complete restoration of function may be expected if chronic deforming articular changes are absent.

Observation of a concentration of uric acid in the serum is of considerable help in diagnosis if properly determined, but may be misleading in selected instances. The determination in the routine biochemical laboratory is more difficult than several of other routine procedures. Uricosuric agents such as sodium salicylate, cinchophen, corticotropin (ACTH) and Butazolidin® are anti-arthritic agents that may depress an elevated urate concentration and cause

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confusion. Known uricosuric agents should be omitted for at least 48 hours if diagnostic information is sought regarding the concentration of uric acid in the serum.

The response to a "full course" of colchicine is highly specific. No other disease of the joints responds so well to this drug. The other anti-arthritic drugs which include sodium salicylate, corticotropin and Butazolidin are endowed with limited diagnostic capacity. A "full course" of colchicine will be described later.

Conditions other than gout which may be associated with increased concentration of serum urate include acute febrile illness, renal insufficiency, leukemia and selected other blood dyscrasis. It is noteworthy that increased concentration of uric acid in the serum occurs relatively often in non-arthritic relatives of gouty patients. Furthermore, in a series of "normal" persons a small proportion may show an increased concentration of serum urate that is not explained satisfactorily. The determination of serum urate in a multiphasic screening project as a public health effort is to be encouraged.

Roentgenographic evidence of articular disease is not an early finding in patients with gout. A decade or more may elapse following the initial attack of acute gouty arthritis before the characteristic roentgenographic changes are present. Not infrequently in a mild case of gout no changes will be noted in unmagnified images throughout the natural life of the patient. With the development of a satisfactory technique for magnified roentgenography, characteristic changes may be detected in some patients at an earlier stage of the disease.

Circumstantial evidence suggestive of gout includes low grade albuminuria, hypertension, large vessel sclerosis and urate calculi. It is not believed that coronary sclerosis in the absence of articular gout is intimately related to the metabolic dyscrasia.

The increased concentration of uric acid in the serum reflects a similar concentration in the synovial fluid and probably other interstitial fluids except those associated with the central nervous system. The mechanism by which increased concentration of uric acid in body fluids is brought about is not known but certain presumptions have been advanced. There are at least three reasonable possibilities to account for the increased concentration: Decreased destruction, impaired excretion or increased formation.

There is meager evidence only that gouty patients are deficient in uricolytic enzymes. The only experimental data in this regard indicate that there is no difference between a gouty and a non-gouty subject with regard to destruction of preformed uric acid. Impairment of excretion of uric acid to the kidney received considerable attention before the modern concept of renal function was widely accepted. At the moment it is believed that uric acid appears in glomerular filtrate in essentially the same concentration as it exists in a protein-free filtrate of plasma. The glomerular filtrate is acted upon by the tubular cells and approximately 90 per cent of the urate is resorbed and only 10 per cent is excreted in bladder urine.

If expressed in functional terms, the urate clearance is approximately 10 cc. per minute. This implies that the quantity of uric acid contained in 10 cc. of plasma is excreted from the body in this unit of time. This may be compared in a controlled experiment with the clearance of water of 2 cc. per minute and the clearance of urea of 65 cc. per minute. If 10 per cent of uric acid that appears in glomerular filtrate is excreted and 90 per cent is resorbed, it might be in the realm of possibility to alter this proportion by interfering with tubular resorption. The uricosuric agents noted above are believed to act in this manner. Furthermore, it has been demonstrated that when the sugar content of the blood is high—400 mg. per 100 cc. or greater—the tubules are saturated and working maximally in resorbing glucose from glomerular filtrate and the excretion of urate is enhanced. It has been postulated that in such circumstances the resorption of glucose takes precedence over resorption of urate and for a time the tubules do not extract the usual amount of uric acid.

In recent years another phase of uric acid metabolism has been approached through the use of isotopes, radioactive and heavy isotopes alike. Selected studies in humans and in animals utilizing labeled substances have shed considerable light upon the precursors of uric acid. It has been known for some time that uric acid is the end-product of nitrogenous substances of amino acid and pyrimidin origin. Most other mammals convert uric acid to allantoin and excrete only small amounts of uric acid. Birds and reptiles excrete uric acid as the end-product of nitrogenous substances whether of purine or amino acid origin.

Uric acid is excreted in relatively constant amounts by humans and is little affected by variations in dietary intake except for purine or nucleic acid substances. At least 300 mg. of nitrogenous urate is excreted daily on a purine-free diet with an adequate caloric intake.[11] It is generally accepted that mammals are capable of synthesizing purines as well as of converting purines to uric acid. It has been shown only recently, however, that some of the simpler biological substances such as carbon dioxide, formic acid, lactate, acetate, glycine and serine contribute a nitrogen or a carbon atom to the uric acid molecule in the intermediary metabolism of the substance. The observation that some of these sim-

pler biological substances may stem from carbohydrates or fats as well as proteins and purines should affect the thinking regarding the dietary regimen for patients with gout.

Another isotope technique that has been used by a few laboratories in recent years for the study of uric acid metabolism and the gouty dyscrasia is the uric acid molecule tagged with heavy nitrogen (N^{15}). The uric acid molecule with two isotopic nitrogens may be synthesized in the laboratory and injected intravenously into experimental subjects. From 25 to 100 mg. of the purified labeled uric acid may be injected as a neutral solution without untoward effects. Complete urine samples are then collected for a period of approximately one week. The uric acid is isolated, broken down and the determination of the ratio of N^{15} (heavy nitrogen) to N_{14} (naturally occurring nitrogen) is made in a mass spectrometer. The information gained permits calculation of the total amount of uric acid that is freely diffusible within the body at the time of the injection. Obviously certain assumptions are necessary but the results are quantitative and have been confirmed in several laboratories.[2] The metabolic pool or miscible pool of uric acid for a normal person ranges from 900 to 1,300 mg. and the turnover rate of pools ranges from 0.6 to 0.9 times per day. Patients with gout, on the other hand, have a metabolic pool that is two or more times greater than the normal and a turnover rate that is appreciably less.

The significance of the mathematical calculations derived from these isotope experiments is not defined clearly. The rapidity with which uric acid enters and leaves the miscible pool as measured by the turnover rate, however, is in keeping with the metabolic exchange of other biological substances as measured by isotope techniques. The metabolic pool probably does not take into consideration deposits of uric acid in soft tissue and bone. The technique is an expensive and a laborious one for each experiment and does not lend itself to a large number of experimental subjects or a large number of therapeutic agents. Undoubtedly the determination of the miscible pool and turnover rate would be a good diagnostic tool if it could be applied widely. It probably is the most reliable diagnostic laboratory procedure in the pretophaceous stage of the malady. Fortunately it is not necessary to resort to this procedure in order to reach a presumptive diagnosis.

The action of drugs on the miscible pool and on the turnover rate has been studied in a few instances as noted below but other antirheumatic preparations might be investigated with this technique. What action precipitating agents may have upon the metabolic pool has not been investigated nor has a series of non-affected relatives of gouty patients been so investigated.

Adequate treatment of acute attacks of gout is not understood as generally as deserved. Even physicians who have the disease show less than maximal appreciation of the proper therapeutic regimen. Colchicine or a preparation containing colchicum has been recommended for almost six centuries for the treatment of the acute stage. Colchicine remains the single most practical drug, in the author's opinion.[3] In the introduction of this discussion the hope was expressed that diagnosis and therapy would be based upon physiological and biochemical principles. Colchicine is an exception to this hope. The pharmacologic action of colchicine is not known. The use of colchicine is purely empirical. No consistent effect upon the concentration of uric acid in the serum or the excretion of uric acid in the urine following the administration of colchicine has been demonstrated. Nor does colchicine alter appreciably the miscible pool of uric acid or the turnover rate. It is nevertheless a powerful and valuable drug in the treatment of gout. Colchicine is available in 0.5 mg. tablets and need not be administered with a complementary drug such as salicylate. The ingestion of one tablet (0.5 mg.) every hour or two tablets every two hours should begin at the earliest sign of acute articular distress. If the attack proves to be mild, then not more than four or six tablets need be taken. If the attack is severe or even moderate, ingestion should continue until a "full course" has been taken. This varies between 8 and 14 tablets.

The measuring stick for an adequate number of tablets is the onset of gastrointestinal distress—nausea, vomiting or diarrhea. When that occurs, colchicine is to be stopped and a gastric sedative taken. Tincture of camphorated opium, 5 cc., constitutes the second phase of the "full course" and doses of that amount should be taken every two hours until the untoward symptoms subside. Response to a "full course" of colchicine is adequate in most instances if begun early. In an inadequately treated acute attack or an acute attack that has not responded maximally, a second course may be necessary after a lapse of 48 hours. It is unwise to begin a subsequent course sooner because of intolerance of the gastrointestinal tract.

Colchicine is a safe preparation to use and the incidence of serious toxic effects is lower than that with other anti-gout remedies such as cinchophen, corticotropin and Butazolidin. The carcinogenic action of colchicine which has been demonstrated in plants bears no clinical significance to the use of colchicine in humans. In order to demonstrate a carcinogenic action in plants, the amount of colchicine that must be applied is, relatively, as much as one hundred times the therapeutic dose for gouty patients. Over a period of almost two decades the incidence of cancer in patients observed by the author appeared to

be no greater in those who took colchicine at frequent or infrequent intervals than in a similar number of normal or non-gouty persons. There is no objection to giving codeine or other analgesics during the first few hours after the institution of the colchicine regimen. Also a drug to induce sleep may be given at bedtime. Frequently this enables the patient to return to sleep after each dose of colchicine if the course is continued during the night.

There are indications for the intravenous use of colchicine in selected instances. The author uses it thus to complement or to supplement partially the oral route but not to replace it. It is believed that patients should not be dependent upon an intravenous medication at frequent intervals if the oral route will suffice. A few patients with advanced chronic gouty arthritis who have frequent attacks of acute gout may rely upon the intravenous route because of the apprehension of possible gastrointestinal distress. Intravenous injection is also helpful in treatment of gout in a patient with a peptic ulcer or a chronic disturbance of the colon such as colitis or diverticulitis, for such a person may become intolerant prematurely to a "full course" of colchicine by mouth. In either instance, approximately half of the "full course" is given by the oral route and the remainder intravenously. Sufficient intravenous colchicine (1.0-2.0 mg.) may be given at a single injection to complete a "full course" without causing the gastrointestinal distress that might result from ingestion of a similar quantity near the end of the course.

Butazolidin is believed to be a drug of second choice for the treatment of an acute attack, although several rheumatologists prefer it.[7] In some instances a more rapid response has been reported than that which follows a course of colchicine if Butazolidin (200 mg.) is administered every three or four hours for several doses. In the author's experience, adequate recovery is no more rapid following Butazolidin than following an adequate quantity of colchicine. The one advantage of Butazolidin is that, with it, gastrointestinal irritation is minimal or absent. On the other hand, when Butazolidin is administered daily for a period of days, it may cause serious side effects, particularly upon hematopoiesis. It is believed that further experience will be necessary before the proper place of Butazolidin in the treatment of acute gout can be determined.

Only a short time ago corticotropin was believed to be the drug that might replace colchicine for treatment of an acute attack. Surely dramatic results followed in some patients the intramuscular administration of from 60 to 120 mg. of corticotropin in one or more doses. Other patients showed little or no response to this preparation. In addition to the disadvantages of any preparation that must be administered by the parenteral route, frequently there is recrudescence of articular symptoms two or three days after the last dose of corticotropin.[9] If colchicine is ingested at the same time that corticotropin is administered and continued for two or three days, the return of acute arthritis may be prevented. Thus if corticotropin is administered, probably the best plan is to give submaximal doses of colchicine (1.0 to 2.0 mg. daily) during and after hormonal therapy. It is the author's practice to reserve corticotropin for exceptional instances in which patients are intolerant of colchicine and are in urgent need of treatment for acute symptoms. Cortisone has proved disappointing in the routine handling of patients with acute gouty arthritis and need not be discussed.

Salicylates and cinchophen have been widely used as anti-gout agents but neither is specific nor is either as effective as colchicine in the treatment of acute attacks. The analgesic effect together with the uricosuric action is evidence of some merit. Cinchophen should not be confused with colchicine although pronunciation and spelling are similar. Cinchophen is not recommended, for there are other preparations that are believed to be superior and less toxic. Nor are salicylates used routinely by the author. If they are considered desirable 1 gm. of sodium salicylate may be ingested two or three times a day.

General measures for the treatment of acute gout should be based upon recognized principles of counteracting local and systemic effects of acute arthritis as well as of acute inflammation. A light diet and an abundant intake of fluids together with rest of the affected joints seem obvious. No useful purpose is served if severely affected joints are kept active or subject to weight bearing. If not more than one or two joints of the upper extremities are involved, the application of an arm sling may permit continued ambulation. Restriction to a chair or bed is desirable if one or more joints of the lower extremities are severely afflicted. Tight shoes should be avoided during the day and a cradle for the bed covers used at night if the feet are involved in acute arthritis. Local application of moist dressings, dry heat or cold compresses may have limited value.

Gout between acute attacks is as susceptible to therapeutic agents as it is in the acute state. Although no effect upon uric acid metabolism may be attributed to colchicine, the periodic use of this preparation in the intercritical period has been found to be extremely useful.[10] The author recommends some colchicine in the intercritical period. If the patient has less than one acute attack a year, one colchicine tablet (0.5 mg.) two or three times each week is prescribed. The indirect benefits may be more important than any direct benefit. A patient in whom gout is suspected, on the basis of at least one attack of acute arthritis, is a potential candidate for subse-

quent attacks. If colchicine tablets are taken from time to time, a supply is readily available when articular symptoms return. It is also believed by the author, without the support of statistical evidence, that some local benefit accrues from periodic ingestion of colchicine.

A patient who has more than one acute attack of gouty arthritis a year is considered to be moderately or severely afflicted, the degree depending upon the amount of chronic irreparable damage to the joints and the stage of the natural course of the disease as well as incidence of acute symptoms. The ingestion of at least one tablet a day (0.5 mg.) is recommended for moderately afflicted patients and a slightly higher dose for those in whom the disease is more severe. Tolerance of the gastrointestinal tract usually is the determining factor in establishing the dosage to be given for maintenance of severely afflicted patients —as more than 15 per cent of patients with gout are. A few patients may tolerate and benefit from as many as four colchicine tablets each day of the year. Others may alternate between two and three and four tablets daily. Moderately and severely afflicted persons who follow such a regimen have fewer acute attacks and a sense of well-being. The effect of the drug does not diminish through continuous use; if an acute attack develops, a "full course" of colchicine is maximally effective, irrespective of previous ingestion. Exception must be made in the case of a patient who is on the borderline of gastrointestinal irritability from the daily ingestion of maintenance dosage; in that situation, vomiting or diarrhea may occur before a "full course" for an acute attack can be completed. Hence it is important that the quantity of colchicine ingested daily be not more than the intestinal tract will tolerate. Another obvious gain from the ingestion of colchicine daily is the advantage of having started a "full course" at the earliest possible moment should acute symptoms appear. The number of patients with gout who have taken colchicine daily for a decade or more is sufficiently large that it can be stated with assurance that such a regimen is beneficial and is not associated with undesirable features. Until such time as more effective drugs are discovered or effective means of correcting the disturbance of uric acid metabolism are devised, it is believed that colchicine should be an integral aspect of the treatment during the intercritical period.

A powerful and a non-toxic uricosuric agent to complement the use of colchicine during the intercritical period has been one of the aims of investigators of the metabolic dyscrasia for a long time. Until recently cinchophen and salicylates were the only uricosuric agents available. The disadvantages of these preparations have been mentioned. During the past three years a new preparation, Benemid® (probenecid), has been subjected to extensive clinical trial. Benemid is a powerful uricosuric agent which exerts its action soon after ingestion.[3] It is a substance of low toxicity when administered daily in therapeutic amounts. The site of the uricosuric action is believed to be the tubular cells and the resorption of urate from glomerular filtrate is inhibited. The urate clearance as measured by 24-hour urine specimens may be increased to 15 cc. or higher. The increase in the amount of uric acid excreted each day may be from 30 to 50 per cent in patients who are ingesting 2.0 gm. of Benemid daily. Although the maximum action of Benemid upon the concentration of uric acid in the serum may be apparent during the first few days after the beginning of ingestion, a pharmacologic action is never abated and in most patients the action may be demonstrated so long as the drug is administered daily. The author gives 2.0 gm. of Benemid daily; other investigators prefer a slightly smaller dose.[4, 8] Most patients tolerate the larger dose without gastrointestinal distress. The author has proceeded on the assumption that the larger the quantity of Benemid ingested, without causing gastrointestinal distress, the greater the uricosuric action and the greater the inhibition of the tendency for precipitation of urate in bony and soft tissues. Several patients observed by the author have been taking Benemid for three years. One of them was studied for a three-year period before Benemid therapy was begun. During the control period the concentration of uric acid ranged between 7.5 and 10.5 mg. per 100 cc. of serum. Soon after the ingestion of Benemid was started the concentration decreased to less than 4 mg. per 100 cc. and thereafter varied between 4 and 4.5 mg. In each instance when the concentration was determined, it was below the lower range for gouty patients. Increased excretion of uric acid in the urine, which occurred concomitantly, was probably the cause of the decrease in the amount in the serum. When determined from time to time in the period before Benemid was given the daily excretion of uric acid was approximately 650 mg. A maximum of 1,700 mg. was excreted on the first day of Benemid therapy. After the first week of ingestion of Benemid, the daily amount fluctuated between 900 and 1,500 mg. When last determined, approximately two years after the beginning of treatment with Benemid, it was 1,050 mg.

The third metabolic function influenced by Benemid—this determined in only a few patients—is the metabolic pool of uric acid. When Benemid was given, a significant decrease of the metabolic pool occurred, similar to the decrease observed by Benedict and Forsham[1] following salicylate therapy. However, when administration of Benemid was discontinued, restoration to the normal range was not

observed. On the other hand, an increase to the normal range in the turnover rate did occur, which suggests that Benemid may have some effect upon the intermediary metabolism of uric acid. However, the general consensus is that the only effect is upon the transport of uric acid through the tubular cells.

The clinical benefits associated with administration of Benemid, although it takes some time for them to develop, are encouraging. At first, acute attacks of gouty arthritis occur during Benemid therapy just as they had occurred before administration of the drug was started. In some patients there may be a slightly greater incidence of attacks during the first few months of treatment with Benemid. Subsequent experience may invalidate this impression. It is a clinical observation, however, that acute attacks of gouty arthritis of the same severity appear immediately after the beginning of treatment with this new drug. Meanwhile, the concentration of uric acid in the serum may be within the normal range. This confirms the impression stated some years ago that the absolute level of uric acid in the serum is not the determining factor in the pathogenesis of acute attacks of gouty arthritis. From four to six months after Benemid therapy is started, there appears to be a lessening in frequency of acute attacks. Thereafter the diminution in severity and frequency is reassuring. In addition, the majority of patients have an improved feeling of well-being not noted while colchicine was the only drug administered regularly.

The toxicity of Benemid was not a significant clinical problem in the series of patients observed by the author. A few patients reported minimal gastrointestinal distress when tablets were taken at frequent intervals with the stomach empty. On the other hand, if the single doses were spaced at longer intervals throughout the waking hours, symptoms of this side action usually were not observed. The tablets should be taken with food and not on an empty stomach. Two patients noted a skin rash. In four instances urate stones were passed by patients who were taking Benemid, but the incidence of this phenomenon (15 per cent) was no greater than it is in all gouty patients.[6] Undoubtedly the increased excretion of uric acid in the urine augments the tendency, but to date it has not been a serious clinical problem and in no instance was Benemid discontinued permanently because of the passage of a urate stone. One patient that was observed in a neighboring clinic had a severe anaphylactic reaction when given a very small amount of Benemid. The observation has been confirmed and the validity must be accepted. An abundant fluid intake is desirable for most patients with gout, and continued vigilance in this regard should be stressed if Benemid is taken.

The ultimate benefit from the uricosuric action of Benemid remains to be determined. It is believed that a period of several years must elapse before the advantages as well as the disadvantages will be defined. The longer Benemid is used, the less the apprehension regarding the development of untoward symptoms and the greater the hope of persistent good. Since Benemid stores the concentration of uric acid to the normal range or returns it toward the normal range, decreases the metabolic pool and increases the turnover rate, it is probable that a reverse migration of urates from articular deposits to the miscible pool occurs and that subsequently the urates are discharged from the body by way of the kidneys. Furthermore, since it probably takes years for urates to be deposited in gross amounts in and about joints, undoubtedly a reversal of this abnormality takes a long time also. In the patients observed by the author, no changes were noted roentgenographically until after at least 18 months of Benemid therapy. Other observers have reported regression of subcutaneous or osseous tophi in shorter periods.[5] Until such time as conclusive observations are made in support of regression of the metabolic dyscrasia, colchicine in addition to Benemid should be prescribed routinely during the intercritical period.

There are few clinical data in support of the contention that cortisone, corticotropin or Butazolidin are desirable agents for use daily or at regular intervals in the intercritical period of chronic gouty arthritis. The analgesic action of either of these preparations for low grade symptoms can probably be achieved with other therapeutic agents if it is so indicated. A uricosuric action can be accomplished more effectively by Benemid. Thus it is believed that no one of these preparations is indicated for periodic use in the intercritical period.

Another measure in the treatment of patients with gout is dietary control. An abundant intake of water is highly desirable. Since the concentration of uric acid in body fluid and glomerular filtrate is near the saturation level, the tendency for urates to precipitate in bone and soft tissue as well as in the tubules during the resorption of fluid from glomerular filtrate, which is out of proportion to resorption of urate, poses a threat. Any measure which minimizes this tendency is desirable. Tap water should suffice in most instances. Fluids with caloric supplements may be contraindicated since gouty patients have a tendency to gain weight. A patient with gout should develop the habit of drinking liberal quantities of tap water or alkaline water at meal time as well as between meals. The quantity consumed in the evening should be regulated lest nocturia become a problem. There is only meager evidence that alcoholic beverages, consumed in moderation, aggravate the meta-

bolic disturbance. In an occasional case there may be evidence strong enough to indict a particular alcoholic beverage as an inciting agent for acute gouty arthritis, and in that event it, in particular, should be avoided. On the other hand, most patients with gout can ingest alcohol temperately yet remain free of symptoms provided they do not neglect prescribed anti-gout measures. It is believed that in general any harm done by alcoholic beverages is owing to the amount rather than to the kind ingested.

The undesirable effects of purine foodstuffs have been noted on theoretical grounds for many years. The clinical literature on gout abounds in references to the subject. It is fortunate that several of the foodstuffs particularly high in purine content may be avoided without making a dietary invalid of a gouty patient. Although not reported to be as harmful as purines for patients with gout, proteins, particularly red meat, have been subjected to scrutiny. Many diets for patients with gout permit little or no red meat because of the possible exogenous and endogenous sources of uric acid. Studies by means of isotope techniques during the past few years have identified some of the precursors of uric acid, as was noted earlier in this discussion, and have removed some of the stigma from proteins. Recent observations in laboratories suggest that carbohydrates and fats, as well as proteins and purines, may be precursors of uric acid. The therapeutic implications regarding dietary restrictions for gouty patients are affected by these experimental data. Since carbon dioxide, formic acid and acetate contribute to the uric acid molecule, it is apparent that carbohydrates as well as proteins and fats in the diet are potential precursors. It is reasonable to assume, however, that some amino acids may contribute to the uric acid molecule to a greater extent than others. Laboratory evidence on this point is desirable.

The potential harm from a liberal intake of protein is believed to have been emphasized unduly. It is not generally appreciated, however, that proteins and certain nucleoproteins that yield pyrimidin base form urea, not uric acid, as the nitrogenous end-product. It is believed that a moderate intake of protein is permissible for patients with gout except in the presence of gross renal insufficiency. Restriction of proteins for such patients spares the kidneys the burden of excreting nitrogenous products generally. Such restriction does not necessarily imply that protein foods have a detrimental influence *per se*. Foods high in purine substances should be avoided at all times. These include meat extract, calf brain, anchovies, herring, spleen, liver, kidney and tongue. A high fat diet should be avoided for two reasons. It may precipitate an acute attack of gout as well as contribute to obesity. A patient with gouty arthritis who is overweight is putting a greater strain than is necessary upon weight-bearing joints. An obese gouty patient should avoid a high carbohydrate diet although there is little evidence except as noted above that carbohydrates are primary offenders.

In conclusion it may be stated that the proper use of a few selected anti-gout drugs will accomplish much in the control of the metabolic disturbance as well as the articular distress while temperate rules of eating and living should contribute generally as well as specifically.

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The Sublingual Administration of Curare

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• A new method of administering d-tubocurarine transmucosally by sublingual pellets (and also by rectal suppository) was used in 100 patients. In therapeutic dosage of 6 to 12 mg., it was found to be non-toxic and very effective in relieving pain due to acute and chronic muscle spasm. The relief was often of long duration or permanent and no unpleasant side effects were noted in any case. The drug was found to be more prompt and more effective in its action than mephenesin.

In addition to relief of pain, it was found to be useful in distinguishing between kinds of pain and hence in differential diagnosis.

CURARE, administered by injection, is now a well established drug in modern medicine. Clinical experience has confirmed experimental evidence that its toxicity is low in an effective dose range when adequate ventilation is maintained. Its first modern clinical use in neuropsychiatry to mitigate the convulsions incident to shock therapy was soon overshadowed by its employment in anesthesiology to enhance the relaxation of the skeletal musculature during anesthesia.

The first clinically adequate curare introduced by Gill, prepared by Squibb, and used by Bennett, was a solution of the whole drug known as Intocostrin.® The active principle of curare is d-tubocurarine and most present day preparations contain only this alkaloid.

Relatively short duration of drug action is desirable where curare is indicated in anesthesia and neuropsychiatry. For this purpose, the intravenous method of administration is ideal. Quite another circumstance prevails when curare is used in the treatment of acute or chronic diseases in which spasm of the voluntary muscles is a feature. Here a long continued but predictably lower level of curarization is desirable.

Fuller[4, 5] reported on the clinical use of a slow-release preparation of curare whose safety in animals had been established by Neff. This preparation contains 25 milligrams of d-tubocurarine per cubic centimeter and is given intramuscularly in doses of from 1 cc. to 1.2 cc. daily. A nurse once gave one ampule instead of 1 cc. to a none-too-robust patient. This was 125 mg. or five times the therapeutic dose. The patient was well relaxed, but had no ill effects and at no time was artificial respiration necessary. This affords an example of the relative safety of the slow-release preparation. Fifteen milligrams of an aqueous preparation of d-tubocurarine given intravenously to that patient probably would have resulted in respiratory arrest. The safety of the slow-release preparation of d-tubocurarine has been established insofar as danger to life from over-curarization is concerned.*

Clinicians have complained that some patients show evidence of a more rapid release of d-tubocurarine during muscular exercise, such as walking. It would seem that with the increase in circulation incident to walking, more d-tubocurarine is released from its intramuscular depot. Patients so affected would complain of great muscular weakness, diplopia, or both.

There are certain other shortcomings that are inherent in the injection of any drug in a repository medium. These include the necessity for the patient to present himself at the physician's office for the injection, and the possibility of an allergic reaction from the components of the menstruum.

The idea of sublingual administration of curare originated with Erdei of Toronto[1] who suggested it to Ferguson,[3] professor of pharmacology at University of Toronto. Ferguson held out little hope that the sublingual administration would be effective, since Walton's[9, 10] work had demonstrated that substances with low lipoid solubility are poorly absorbed sublingually. Ferguson said he still considered it likely that the effects produced by sublingual administration may be due to absorption lower down in the gastrointestinal tract, although he concluded that "such thoughts are not of great practical importance, because the sublingual method of administration seems to work remarkably well."

The first preparation used by the authors was in the form of sublingual pellets† formulated to contain 2 mg. of Gill's d-tubocurarine[4, 5] per pellet. The pellets now being used represent an advanced and different formulation by Gill. They contain 3 mg. of

*Since this time another almost identical accident occurred with the same outcome.

†NOTE: The pellets, suppositories, and chemically pure d-tubocurarine used in this study were made available by Richard C. Gill, Cugil Laboratories, Inc., P. O. Box 281, Palo Alto. These pellets and suppositories are now known as Tubalex.

TABLE 1.—*Transmucosal curarization. Biological establishment of safety indices for d-tubocurarine sublingual pellets (3 mg. each) and rectal suppositories (3 or 5 mg. each) by aberrant administration routes.*

Dosage Form of Tubalex	Animal*	Route of Administration**	Maximum Actual Dose Administered: mg./kg.†	Maximum Theoretical Dose: Mg./70 kg. Human‡	Observed Response
Pellets	Dog	Ingestion	22.5	1,575.0	0
Pellets	Rabbit	Ingestion	19.8	1,386.0	0
Pellets	Guinea pig	Ingestion	27.9	1,953.0	0
Pellets	Rabbit	Rectal, by "overloading"	2.05	143.2	0
Pellets	Guinea pig	Rectal, by "overloading"	12.5	875.0	0
Suppositories	Rabbit	Rectal, by "overloading"	5.08	355.6	0
Suppositories	Guinea pig	Rectal, by "overloading"	11.86	830.2	0

**Since normal clinical investigational employment has evidenced an apparently limitless margin of safety at all dosage levels used, the actual ingestion of gross amounts of the pellets (and rectal "overloading" with them and with the suppositories) was undertaken to demonstrate effects—if any—of aberrant, or perverse, routes of administration, should such be accidentally employed.

† Since the responses (i.e., any observed curarization) were entirely negative as these dosage levels were reached, it was deemed unnecessary to go beyond them.

‡ Represents extrapolation of ** in terms of a hypothesized 70 kg. human.

*Acknowledgment is made to the Department of Pharmacology, Stanford School of Medicine, and Mr. Bing Moy of that department for the dog experiments; work with the other animals was performed by Cugil Laboratories, Inc.

d-tubocurarine and, when administered sublingually, disintegrate in from 20 to 30 minutes.

Curare is almost ineffective when swallowed. This has been explained on the basis of its slow absorption in the alimentary canal and its rapid elimination in the urine. The liver is thought to detoxicate curare. While there is no strong evidence to support detoxication by the liver, the results of sublingual administration lend some support to this theory. The sublingual method does afford a means whereby drugs may in part circumvent the portal circulation. It has been shown by Everett[2] that rats can detoxicate and eliminate curare, independent of liver and kidney function. However, this does not prove—as Everett readily admitted—that liver and kidney function play no part in the destruction and elimination of curare. Mahfouz[6] and Marsh[7] are in accord with this concept. If circumventing the liver is in part responsible for the efficacy of the sublingual administration of curare, then the rectal method should also be satisfactory. Preliminary tests with curare in suppositories indicate that this is true.

Notwithstanding adequate clinical evidence as to the safety of these dosage-forms (and the fact that they elicit only a sub-subjective, infracurarization) it was decided to exert every means—in animal trials—to elicit an objectively discernible degree of curarization (however slight) by resorting to aberrant routes of administration and gross "overloading" with the alkaloid.

As shown in Table 1 maximum actual doses administered to animals were extrapolated in terms of a hypothesized 70 kilogram human. When these actual animal doses reached 27.9 mg. per kilogram of body weight, or a theoretical ingested dose of 1953.0 mg. (651 three-milligram pellets) for the 70 kilogram hypothesized human (at least 78 times a lethal injected aqueous dose of 24 milligrams) further dosage increases were deemed unnecessary in these experiments.

As even with this gross overdosage, there was no observable sign of curarization in any animal, margins of safety for accidentally aberrant, or perverse, self-administration would seem, reasonably, to be without limit.

Success in treating patients with severe painful muscle spasms, who were refractory to both narcotics and mephenesin, encouraged the authors to employ sublingual curare in the treatment of other acute and chronic spastic entities.

A tall athletic male in his thirties, weighing around 250 pounds, had episodes of severe pain in the back and muscle spasm following laminectomy for a herniated intervertebral disc. Opiates afforded only transient and partial relief. Mephenesin did nothing. Sublingual curare effected good relief of muscle spasm and the pain incident to it. As would be expected, the soreness did persist. On one occasion, however, the patient complained of severe pain and "muscle spasm," neither of which was relieved by curare. In fact, a supplemental dose of curare was given intravenously to the point the patient had pronounced diplopia, and yet there was no relief. Physical examination before curare was given had revealed no objective evidence of muscle spasm whatever, but the patient said he felt as though his muscles were in knots. Procaine administered intravenously gave immediate and complete relief. (Curare has no effect on the muscles of the blood vessels, but procaine given intravenously will frequently relieve vasospasm.)

A 16-year-old, 160-pound boy with fracture-dislocation of the neck was completely paralyzed below C-7. Recovery was slow and was complicated by paroxysms of severe and painful muscle spasms in both the lower extremities. Narcotics gave only partial relief of pain, and mephenesin gave no relief of muscle spasm. The episodes of muscle spasm were becoming more frequent and more severe. The neurosurgeon predicted such a train of events, and asked that sublingual curare be tried.

Sublingual curare provided sufficient relief to permit the complete withdrawal of narcotics. Contractions still occurred, but their severity was greatly reduced and they were no longer associated with severe pain. The dose of curare needed to bring this about was 12 mg. four times daily, and sometimes once during the night. The procedure followed was to have the patient place two 2-mg. pellets under his

tongue and repeat at 20-minute intervals until a total of six pellets (12 mg.) had been taken. Orders were given not to swallow or talk during the period of administration.

There was no subjective evidence of weakness in any patient regardless of the dose. It would appear that spastic muscles are much less resistant to curare than are normal muscles and that, in subliminal therapeutic doses, the drug affects only muscles in spasm. When the drug was taken sublingually by the authors in therapeutic dosage (but in the absence of any clinical lesion) no subjective effect whatsoever was noted other than the slightly bitter taste. There was no sign of cumulative action after daily doses ranging from 36 mg. to 54 mg. were taken for one month. In a period of more than a year curare was given sublingually to more than a hundred patients without a single toxic or unpleasant side effect.

Clinical estimation of the effect of sublingual curare consisted in assessing the power of the patient's hand grip before and after various doses of the drug. Attempts to estimate the content of the drug in the blood plasma after the sublingual administration of d-tubocurarine by the method of Quinn and Woislawski[8] were unsuccessful. This is understandable when it is realized that in their studies, the amounts recovered from the plasma, although small even when an injected paralyzing dose was given, are not determinable below 2 mg. per milliliter by their method. It is apparent, therefore, that the amount of d-tubocurarine present in the blood plasma during sublingual administration is below this level.

Electromyographic studies on a normal subject before and after the sublingual administration of curare were inconclusive.*

A moderate but definite decrease in the power of the hand grip was noted on a dynamometer, although no subjective weakness was felt following the sublingual absorption of curare.

* * * *

During the period of study, the authors gave the drug in the office and observed results within half an hour, since the action of curare is rapid. In fact, it is frequently possible to get results in 10 or 15 minutes. Usually an initial dose of 6 mg. (2 tablets) was given and the patient was observed in 10 minutes. If there was no benefit, another 6 mg. was given. If no improvement occurred within 20 minutes, additional curare was not helpful.

During the study the drug was found not only to be useful as a single, specific therapeutic agent, but also to be of considerable value as an adjunct in therapy. For example, it was frequently quite useful

*These studies are being repeated under controlled conditions on patients with muscular spasm caused by a variety of etiologic factors, by Thomas A. Gonda, Chief of Neurology and Psychiatry Service, Veterans Administration Hospital, San Francisco. This will probably be the subject of a further publication.

TABLE 2.—*Results of administration of curare transmucosally for relief of pain*

	Degree of Relief		
	Good 70-100%	Fair 20-70%	Poor 0-20%
Back Pain			
1. Lumbosacral strain:			
a. Traumatic	3		1
b. Acute lumbosacral angle	5	1	
c. Sacralization of L-5	1		
d. Due to pes planus	2		
e. Due to pregnancy	1		
2. Ruptured intervertebral disc	1*		3
3. Cervical torticollis	2	3	
4. Backache due to nervous tension:			
a. Cervical and occipital area	10	1	1
(1) With scalenus anticus syndrome	4		
b. Shoulder and dorsal spine area	1		
c. Lumbar spine area	2		
5. Fracture of cervical spine (old)		1	
6. Backache due to prostatitis			1
7. Unstable back with muscle spasm	1		
8. Low backache, unknown cause	1		
Total	34	6	6
Pain Due To Muscle Spasm in Other Areas			
1. Traumatic:			
a. Traumatic myositis	2		
b. Traumatic arthritis with surrounding muscle spasm	2	1	
c. Tear of muscle insertion		1	
d. Muscle strain	1	1	1
2. Cramps:			
a. Leg cramps	4	1	1
b Cramps in buttock following injection	2		
c. Post-encephalitic Parkinsonism with cramps			1
d. Salt depletion cramps	1		
3. Bursitis:			
a. Deltoid:			
(1) Without calcification	1		
(2) With calcification	2		3
b. Olecranon		1	1
4. Myositis, non-traumatic	3	1	
5. Spasm following cerebrovascular accident	2	1	
Total	20	8	7
Arthritis			
1. Rheumatoid:			
a. Spine	1	1	1
b. Knee			2
c. Shoulder		1	1
2. Osteoarthritis:			
a. Spine	3	1	1
b. Hip			1
Total	4	3	6
Miscellaneous:			
1. Uterine cramps			1
2. Extradural hematoma			1
3. Pleurisy			1
4. Occipital headache due to abscessed tooth			1
5. Sciatic neuritis (one case probably due to a ruptured intervertebral disc)			2
Total			6
Total of All Groups	58	17	25

*This patient had only fair relief of pain in legs.

in relaxing cervical muscle spasm in torticollis due to partial subluxation, prior to neck traction, thus making this maneuver much easier.

Curare is sometimes of value in giving partial relief from pain in the back owing to a ruptured intervertebral disc. However, it will not significantly help the nerve root pain, as would be expected from the nature of its action.

Another valuable use is in treating a scalenus anticus syndrome. It is quite effective in alleviating the symptoms of this syndrome and thus is of diagnostic as well as therapeutic value. In many cases, it is possible to avert the need for severing the muscle by using the drug for a few weeks during the acute phase.

The drug was also found to be of some value in differential diagnosis when used as a therapeutic test, bearing in mind that its action is specifically limited to relieving pain by relaxing muscle spasm. For instance, it is of value in determining whether pain in the neck and back is due to muscle spasm resulting from nervous tension or to organic change as in renal or prostatic disease. In one case, occipital headache was thought to be caused by tension but was not relieved by curare, and ultimately was found to be due to an abscessed tooth. In another case rather obscure pain in the chest did not abate when curare was given and the patient was later found to have pleurisy. Curare is also occasionally of value in differentiating puzzling abdominal pain, since it will relieve pain due to abdominal muscle spasm such as occurs in a rectus tear or strain, but is of no value in treating the smooth muscle spasm of uterine cramps or a bowel lesion. It is also of no value in relieving pain due to tumors, as in the case of a patient with an extradural hemangioma, in which the cause of the pain was at first rather puzzling.

Another interesting observation was that although the drug works best on muscles which are palpably in spasm, it will also frequently give pronounced relief where no muscle spasm can be felt. This was noted particularly in several patients who had had considerable pain from muscle cramps caused by injection of mercuhydrin into the buttocks. These muscle spasms were never palpable, but nevertheless pain did not develop if curare was administered first.

In some cases it is possible to identify each of different types of pain caused by an injury. Several patients, for example, had wrenched knees or bruised extremities or had bursitis. Curare relieved the pain due to the associated muscle spasm or cramps, but the pain due to the bruise itself, or the sprain or bursitis, persisted and could be more accurately localized, and specifically treated if indicated.

In general, the drug was found to be far more effective and reliable than mephenesin. It produced results in many cases where mephenesin had failed. Its action, moreover, is much more prompt, and consequently it is possible to observe the results before permitting the patient to leave the office. Furthermore, the beneficial effect is longer lasting and, in most acute cases, one or two doses are adequate. In cases of chronic pain, one or two doses daily have usually been adequate. The drug has been used in a half dozen such cases for as long as nine months without toxic effects.

Recently the authors have been administering d-tubocurarine by rectal suppository with considerable success in chronic cases. Given in that manner the drug has a slower and more prolonged action, and the method has been very useful, for example, in patients with muscle spasms and contractures following a cerebrovascular accident. A continuation of this means of administration is in progress, with promising results, and will be the subject of a succeeding report.

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Stenosis of the Urethral Meatus in Boys

Surgical Correction

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• Stenosis of the external urethral meatus in boys is not an uncommon developmental defect. It may cause disease higher in the urinary tract and unless corrected may lead to permanent damage.

The most effective treatment is meatotomy, which can be carried out in a physician's office by a method described.

STENOSIS of the external urethral meatus in boys occurs frequently but either is not recognized or, too often, is considered an insignificant developmental defect not requiring medical care. As a cause of chronic urinary tract obstruction, it cannot be ignored. Campbell[2] in a recent review of the subject of hydronephrosis noted that stenosis of the urethral meatus was the etiologic factor in approximately one per cent of cases. A lesion that is so obvious and easily recognized ought not be permitted to persist long enough to cause renal damage.

ETIOLOGY AND PATHOLOGY

Stenosis of the external urethral meatus is a developmental defect. The phallic portion of the male urethra is formed in the embryo in the fourteenth week by a coalescence of the lips of the urethral groove which extends distally to the glans penis. Arey[1] said that an epithelial plate extends distally from the urethral groove into the glans, the plate forms a groove by splitting, and the lips of the groove grow together to form the distal segment of the urethra and the external meatus. (A shallow groove would result in a narrowed distal segment and a stenosed urethral meatus. The characteristic appearance of a stenosed urethral meatus would seem to support the foregoing hypothesis.) A stenosed meatus is situated at the apex of the dome of the glans penis and the opening is round. The normal urethral meatus is oval in shape and extends from the apex of the glans downward to the frenum (Figure 1).

The important pathologic changes associated with stenosis of the external urethral meatus are its effect upon the urethra, bladder and upper urinary tract. Dilation and tortuosity of the urethra result from stenosis of the external meatus. If obstruction continues the bladder musculature eventually becomes trabeculated and decompensation results: The ureterovesical valve does not function and each micturition is accompanied by reflux of urine to the upper tract. The ureters become dilated and the kidneys become hydronephrotic. Ultimately, if the obstruction is not relieved, the renal parenchyma is damaged.

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SYMPTOMS AND DIAGNOSIS

Stenosis of the urethral meatus is not always accompanied by symptoms. A parent may notice a child straining during micturition and may note that the urinary stream is fine or split. The child may complain of dysuria and abdominal pain during and shortly after voiding. Signs and symptoms of infection in the urinary tract manifested by repeated bouts of urinary frequency, dysuria, chills and fever, and pyuria may lead to diagnosis of stenosis. Occasionally enuresis, hematuria and discharge of pus are the symptoms first noted.

Meatitis may be a persistent complication of stenosis of the external urethral meatus. Edema and redness at the meatus or hemorrhage and incrustation may occlude the orifice and the child may complain of severe pain when he urinates. Local and systemic therapy are frequently ineffective. Meatotomy will effect a cure.

In rare instances, hydronephrosis may result from stenosis of the urethral meatus. A careful examination of the urinary tract, including cystoscopy, pyelography and renal function tests should be carried out in any case in which a child has recurrent infection of the urinary tract secondary to stenosis.

To diagnose stenosed external urethral meatus it is necessary only to observe that the meatus is round, of pin-point size and situated at the apex of the dome of the glans penis. There may be no symptoms. Calibration of the orifice is neither necessary nor practical.

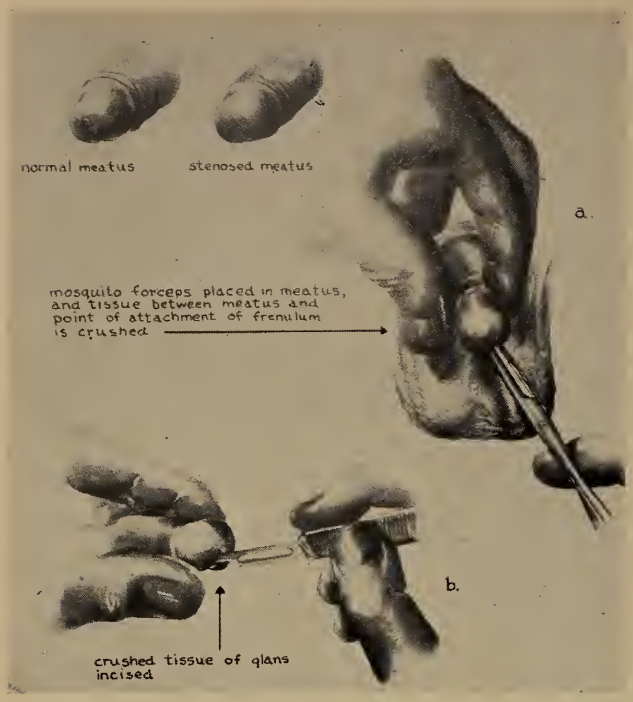


Figure 1.—Operation for correction of stenosis of the external urethral meatus.

TREATMENT

Stenosis of the external urethral meatus is best treated by adequate meatotomy. (In some cases it is possible to enlarge the narrowed opening by inserting sounds or silk woven bougies, but the procedure must be repeated if an adequate orifice is to be maintained, and failure is not uncommon.) Meatotomy may be carried out as an office procedure with local anesthesia brought about by injection of four minims of 2 per cent procaine hydrochloride solution into the glans penis just ventral to the stenosed meatus. One blade of a sharp pointed mosquito hemostat is introduced into the urethra for a distance of 0.5 cm. (Figure 1, a) and then is locked, thereby crushing the tissue between the meatus and the point of attachment of the frenum to the glans penis. The locked forceps are kept in place for six minutes to provide hemostasis (Figure 1, b). A No. 11 Bard-Parker knife blade or scissors may be used to cut the crushed ridge of tissue.

After the operation a small amount of boric acid ophthalmic ointment should be injected once daily into the enlarged urethral opening. This can be done by the patient's parents. Tubes containing the ointment have a long, conical tip that can be inserted easily into the meatus and that acts as a dilator. Two weeks after meatotomy and again three months afterward the meatus should be calibrated by insertion of sounds.

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Primary Cutaneous Coccidioidomycosis

The Criteria for Diagnosis and a Report of a Case

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• *Study was made of a case of coccidioidomycosis known to have resulted from primary inoculation of the organisms into the skin. Clinical observations and laboratory data were obtained at the time of clinical illness and for a period of five years thereafter. From the information thus obtained and correlation of it with what already was known of coccidioidomycosis, it was concluded that the disease originates very rarely as the result of primary cutaneous inoculation. In most instances lesions suspected to be of this type have actually resulted by dissemination of the organisms to the skin from a previously unrecognized pulmonary focus.*

Primary cutaneous coccidioidomycotic lesions closely resemble the primary cutaneous lesions (chancres) in other infectious granulomata, such as syphilis, tuberculosis and sporotrichosis. Spontaneous involution should occur within three months and then there should be immunity to reinfection in all but one or two per thousand instances.

From these observations certain criteria were evolved by which to determine in a case of coccidioidomycosis with cutaneous manifestations whether or not the infecting organism entered through the skin.

IT IS NOW ACCEPTED that coccidioidomycosis usually occurs as a pulmonary infection, resulting from the inhalation of dust containing the arthrospores of Coccidioides immitis. In addition, however, almost all writers on the subject have indicated their belief that in some instances the disease results from primary inoculation of the fungus directly into the skin.[3, 4, 13, 18, 23, 24] In many of the reports recorded in the literature the observers believed that the disease had been acquired in this manner;[1,2,5,6,8,16,19,27] this is true even of the first case ever to be described in North America, that reported first by Rixford[25] in 1894 and again later by Rixford and Gilchrist[26] in 1896, of which it was stated that the initial lesion occurred on the "back of the neck where the collar band rubbed."

The present concept of the pathogenesis of coccidioidomycosis, however, leads to the conclusion that the skin is very rarely the portal of entry. Indeed there is but a single case recorded in the literature (that reported by Guy and Jacob[15] to be referred to later) in which the facts and their chronology reasonably warrant the conclusion that the infection was acquired by this route. The remainder appear almost certainly to represent instances in which a cutaneous lesion, although admittedly the first observed manifestation of the presence of the disease, actually resulted from the dissemination of the organisms to the skin from an earlier, unrecognized, primary pulmonary infection.

The determination of the manner and route of acquisition of the infection is important not only in studying epidemiologic aspects and pathogenesis of coccidioidomycosis, but also it may be of medicolegal importance. Thus, decision as to the justification for compensation of an illness as occupational may be necessary. Also, amputation of a limb or surgical removal of tissue may be wrongly advised in the belief that the "primary" lesion as well as all diseased tissue can thereby be eliminated, when actually the lungs and perhaps other organs are actively involved.

During the past five years the progress of a patient who undoubtedly acquired coccidioidomycosis by direct primary inoculation of the fungus into the skin has been closely observed. The subsequent course of events has strengthened the view that certain criteria can be assigned as necessary for the diagnosis of "primary cutaneous coccidioidomycosis." In the present communication these criteria will be enumerated and their significance discussed.

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TABLE 1.—*Immunological tests* in a patient with primary cutaneous coccidioidomycosis, arranged chronologically*

Duration of Infection	Reaction to Test Material in Various Dilutions					
	Intracutaneous		Precipitin		Complement Fixation	
5 weeks	1:100	+++	Undiluted	++++	Serial dilutions from 1:2 to 1:256, all negative	
	1:1000	++	1:10	++++		
			1:40	++++		
16 weeks	1:100	++++	Undiluted	++++	1:2	++++
	1:1000	+++	1:10	++++	1:4	+
			1:40	Negative	1:8 to 1:256	Negative
30 weeks	1:1000	++++	Negative to all dilutions		1:2	++++
					1:4	+
					1:8 to 1:256	Negative
56 weeks	Not done		Negative to all dilutions		1:2	++++
					1:4	++
					All others negative	
4½ years	1:1000	+++*	Negative to all dilutions		1:2	+++
					All others negative	

*The authors are indebted to Dr. Clement Counter of Long Beach for the performance of some of these tests.

REPORT OF A CASE*

On March 20, 1948, in the course of his regular duties as an employed embalmer, a 32-year-old white man severely abraded the dorsal surface of the proximal phalanx of the right middle finger against a casket. Four days later the area appeared swollen, reddened and mildly tender. The accident was reported to the employer but medical care was not sought until the 16th day after the injury. There was then at the site of the abrasion a mildly tender, deeply indurated granulomatous lesion, 2x1 cm. in size, with a central ulcerative cavity. The hand was moderately swollen and erythematous but neither lymphangitis nor lymphadenopathy was present. The oral temperature was 99.6 degrees F. On April 9 (20th day) the temperature was 101.0 degrees F. in the afternoon. Eight scattered, poorly defined but discrete firm subcutaneous nodules were observed on the dorsal surface of the forearm extending to the elbow. During the succeeding few days the right epitrochlear and axillary glands became enlarged and tender.

Results of routine urinalysis and examination of the blood were within normal limits. The sedimentation rate was 14 mm. in one hour (Westergren method). Tularemia was suspected but smears, cultures and agglutination tests were negative for the organism. In darkfield examination no spirochetes were seen and reactions to serologic tests for syphilis were negative. A roentgenogram of the chest was interpreted as normal. Tests for typhoid and paratyphoid gave negative results. Reaction to a tuberculin patch test was moderately positive. A specimen excised from a nodule for biopsy was interpreted as "non-specific granulation tissue."

The patient first came to the attention of one of the authors (J.W.W.) on April 23 (34th day) for consultation relative to a tentative diagnosis of primary tuberculous complex, which indeed seemed acceptable clinically and was concurred in by Dr. M. E. Obermayer. However, because of the possibility of sporotrichosis (suggested principally by the chain of subcutaneous nodules along the course of the lymphatic vessels), material taken from the primary "chancre" and from one of the subcutaneous nodules was inoculated into Sabouraud's glucose agar. Growth was noted on the third day in all cultures and observed to be inconsistent with Sporotrichum schenckii, but not otherwise identifiable at that time. On the fifth day, however, a few arthrospores suggestive of Coccidioides immitis were seen on microscopic examination of fragments of the culture, and this identification was confirmed the next day. Mice were inoculated intraperitoneally with this culture material, and at autopsy ten days later sporangia (spherules) containing endospores typical of C. immitis were seen. Special attention was then given to a review of the histopathologic section previously referred to and endosporulating spherules were noted.

Immunological tests for coccidioidal infection were carried out, beginning as soon as the diagnosis was suspected and at appropriate intervals thereafter during the course of the illness. The most recent was shortly before the preparation of this report. The results are given in Table 1. The sequence of events is graphically illustrated in Chart 1.

With the diagnosis thus established, further investigation disclosed that shortly after the injury to the patient's hand had occurred he had embalmed the body of a person in whom the cause of death was disseminated coccidioidomycosis. This had been recognized antemortem by those in charge of the case and was so recorded eventually on the death certificate; at autopsy† widespread lesions containing myriads of coccidioidal organisms were noted in the abdominal viscera, skin, lungs and bones. However, neither the patient in the present case nor his employer was aware of these facts at the time the embalming was done. It was also recalled that during the procedure of preparing the body, which entailed considerable handling of the visceral organs, bloody and seropurulent material had entered through a cut in the patient's right glove and had come into contact with the previously injured area.

The patient had not lived in or recently traveled through any of the areas recognized as endemic for coccidioidomycosis and had noted no recent respiratory illness.

The photographs (Figure 1) were unfortunately not obtained until May 5, the 44th day of the illness (dating from the inoculation), at which time the "chancre" had involuted approximately 80 per cent toward normal. It is important to emphasize that this beneficial change had occurred entirely spontaneously, since no specific treatment had been administered. In fact the diagnosis had been established but a few days at that time. The significance of this feature will be discussed later.

The axillary nodes became fluctant on April 26 (37th day) and were incised. From them came purulent fluid in

*Permission to study this case and utilize the experience gained thereby as the basis of this report was cordially granted by Carl Johnson, M.D., of Long Beach. The authors are also indebted to Norman E. Levan, M.D., of Bakersfield for bringing the case to their attention.

† Performed by Edward M. Butt, M.D., Professor of Pathology, University of Southern California School of Medicine.

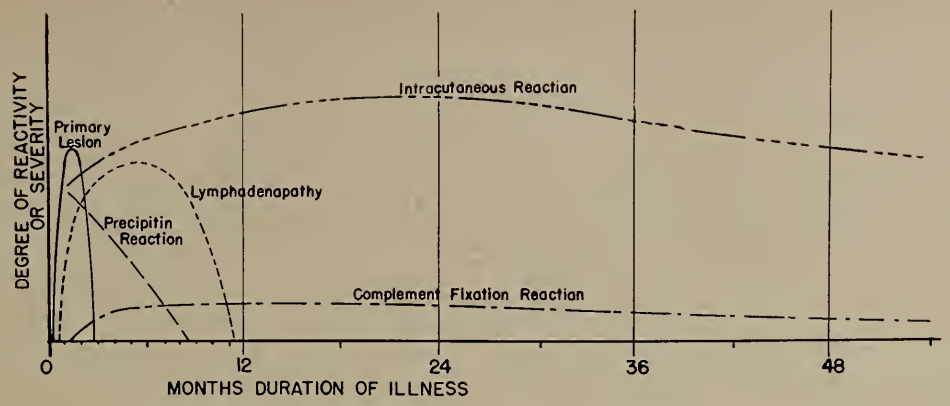


Chart 1.—Graphic representation of the sequence of events in primary cutaneous coccidioidomycosis.

which Coccidioides was demonstrated both by direct microscopic examination and by culture. Moderate numbers of the organism were also noted in histopathologic preparations of a specimen taken from an incised node.

By June 10 (80th day) the original primary "chancre" had entirely healed and the subcutaneous nodules of the forearm had disappeared without ulceration. The fever had subsided and the sedimentation rate was 10 mm. in one hour. As before, results of urinalysis and of routine examination of the blood were within normal limits. The axillary lymph nodes were still swollen but drainage had ceased. The patient returned to work. The residual lymphadenopathy slowly but completely subsided.

The patient has been well during the succeeding four and one-half years. At present a slight scar is visible at the site of the original inoculation and another in the axillary region.

COMMENT

It is noteworthy that in the case here reported the disease resulted from the inoculation of the organism when it was in the "spherule" or "tissue" stage, in contrast to the "arthrospore" or "culture" phase in which it was acquired from dust in all other heretofore reported cases of infection of humans. It may be argued that this case cannot therefore reliably be accepted as prototypical of what can be expected to result from percutaneous inoculation of natural dust containing arthrospores. However, all experience gained in animal inoculation experiments indicates conclusively that no matter which form of the organism is used for inoculation the resulting disease is always identical.

It is obvious that the skin may become involved by coccidioidal infection in two entirely different ways, either by inoculation of the organisms directly into the skin of a previously uninfected person or by dissemination of them to the skin from a primary pulmonary focus of infection acquired some time before by a person whose immunological mechanism fails to focalize the infection. It is the authors' contention that there is much variation between the two cutaneous pathologic processes which follow respectively these two routes of acquisition; they differ significantly in the chronologic sequence of events, in symptoms, in the gross and microscopic pathologic changes they cause, in the manner of extension, in serologic and immunologic manifestations, and in the ultimate prognosis. Each of these subjects needs consideration if the subject is to be adequately covered.

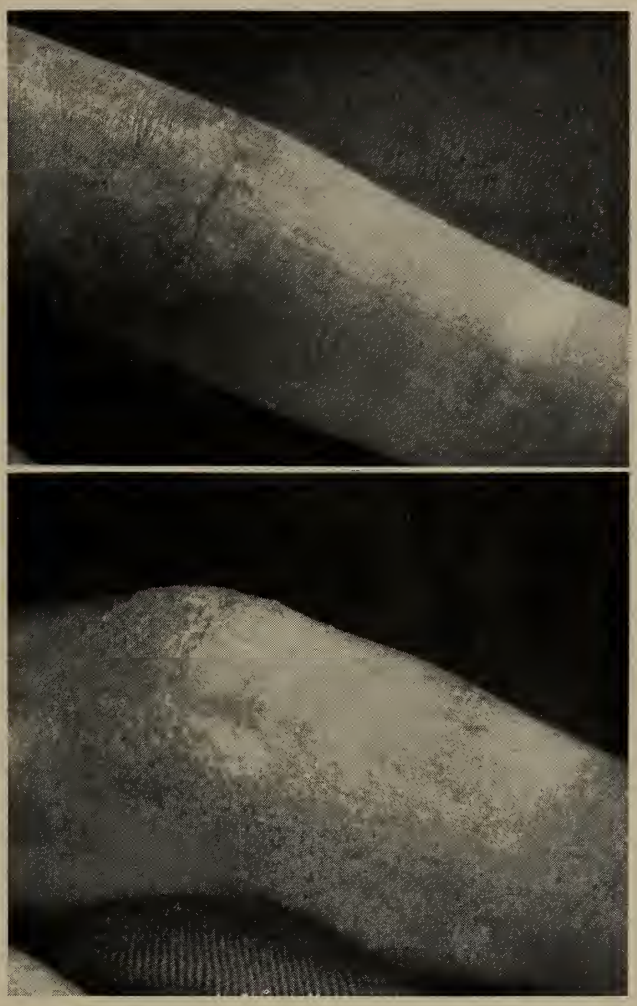


Figure 1.—Primary cutaneous coccidioidomycosis. Lesion on middle finger six weeks after inoculation. *Above*, dorsal view; *below*, lateral view.

Chronology

In the first 42 years after the discovery of coccidioidomycosis, when only the serious, granulomatous form of the disease was recognized, it was natural to conclude that in previously "normal" persons the sudden appearance in or under the skin of a lesion provably due to this fungus indicated that it had been inoculated into the skin directly at that point. This conclusion was even more forcefully supported in cases in which there was known to have been recent trauma at the site, frequently a penetrating wound, which obviously could have been a portal of entry for the pathogenic organisms.

An explanation which more closely adheres to the facts has been available, however, since the discovery by Dickson[9, 10] and Dickson and Gifford in 1937[11] that "San Joaquin Valley Fever" is due to a primary pulmonary coccidioidal infection frequently accompanied by allergic manifestations in the skin consisting of lesions of erythema multiforme or erythema nodosum. In all patients in whom such allergic symptoms develop the prognosis is excellent. In addition, subsequent studies have demonstrated that most of the long-time residents of endemic areas have undergone pulmonary coccidioidal infections, in two-thirds of them in so mild a form as to have been completely inapparent and thus unrecognized. Even though this initial pulmonary invasion remains asymptomatic, however, dissemination to other organs may occur later, and in many cases the first such lesion to be observed will appear in or beneath the skin; indeed, it is now evident that the skin is an organ of predilection in this regard. Also, it is suspected that when dissemination is in progress or imminent, local trauma, whether or not of such a nature as to penetrate the skin, predisposes the injured area to early involvement by the infection.[14, 19, 33] Such cutaneous events as these have been observed repeatedly in patients who were known to have previously acquired coccidioidomycosis by the primary pulmonary route; it seems logical to attribute many less definitive cases to the same mechanism, simply postulating that the preceding pulmonary infection was too mild to have been recognized as such.

To avoid repetition the variations between the two types of infection with regard to the sequence of events will be pointed out in connection with the subject matter covered by the succeeding paragraphs.

Symptomatology

The relative freedom from pain or tenderness in the so-called primary cutaneous "chancre" was a pronounced feature of the process in the case herein reported, as were the firm induration around it, the lymphangitis, the nodules along the lymphatic vessels draining the site, and the regional lymphadenopathy. These observations are all deemed significant.

There is a striking similarity between primary cutaneous coccidioidomycosis (as exemplified in the case reported by Guy and Jacob[15]* and in the present case) and the primary "chancre" phase of several other infectious granulomatous diseases. The syndrome of the mildly painful, deeply indurated, duskily erythematous, ulcerative nodule arising at the inoculated site, followed shortly by regional lymphadenopathy and a moderate constitutional reaction, all having a tendency to subside spontaneously within a few weeks or months, is encountered with but minor variations when the skin has been inoculated with the causative organisms of syphilis, tuberculosis, espundia (American leishmaniasis), sporotrichosis and yaws. In espundia and sporotrichosis there are also commonly tumorous nodules along the regional lymph channels such as were observed in the present case. Aside from this feature, the resemblance to the primary tuberculous complex, when the portal of entry is the skin, is especially close. This is not unexpected when it is recalled how closely coccidioidomycosis mimics tuberculosis in many other phases of pathogenesis, development of symptoms and pathologic changes.[7, 28, 33]

However, the symptoms which result from dissemination of coccidioides to the skin from a previous pulmonary focus are entirely different. Such a lesion begins as an indurated subcutaneous nodule, which then slowly enlarges. At times it develops into a painful abscess which ruptures to the surface and remains for weeks or months as an ulcer or a draining sinus but with little surrounding induration; even more frequently the original blood-borne fungi produce a verrucous plaque with serpiginous, slowly extending borders. There is practically no tendency to spontaneous healing; rather, the skin is likely to become involved over an ever expanding area with a chronic ulcerative, purulent, crusted process. Lymphadenopathy does not ordinarily occur unless bacteria secondarily invade the area.

Pathology

The gross pathologic changes resulting from infections occurring by the pulmonary and by the cutaneous routes have already been described in the preceding paragraphs and the variations between the two entities emphasized.

In histopathologic study of material taken from the original "chancre" in the case herein reported, reaction of mixed type was noted, varying from an acute inflammatory infiltrate in some areas in which polymorphonuclear cells predominated with some eosinophils and lymphocytes, to a chronic, granulomatous reaction in contiguous spots, in which epi-

*It is necessary to point out that in that case secondary coccidioidal lesions developed later beyond the drainage area, suggesting dissemination. The patient recovered, however.

thelioid cells, small lymphocytes and giant cells were seen. With the exception of the eosinophils, these are the histopathologic features commonly considered to be typical of coccidioidomycosis, regardless of the location or type of infection. The coccidioidal spherules were sparsely distributed and difficult to discover. The same pattern was observed in material taken from the regional lymph nodes.

These features are at variance with those to be expected in primary "chancres" of other infectious granulomatous diseases, at least in the early phases wherein an acute reaction predominates and the causative organisms are present in large numbers. It is most important, however, to recall that the tissue examined in the present case was not obtained until five weeks after the onset of the infection, at a time when considerable involution had taken place. In comparison, a "chancre" due to syphilis would have similarly involuted during such an interval so that the original acute phase of the inflammatory process would have become more chronic and the spirochetes much reduced in number. Hence it does not seem warranted to conclude that the histopathologic studies in this case supplied evidence against an intracutaneous portal of entry, although it must be admitted that they did not assist in proving it. It is hoped that when similar cases are encountered in the future, specimens may be obtained for biopsy as early as possible so that this feature may be clarified.

The Significance of the Immunological Tests for Coccidioidal Infection

During recent years extracts prepared from cultures of Coccidioides immitis have been employed in an ever increasing proportion of cases of coccidioidomycosis because of their value as diagnostic and prognostic aids. Three testing procedures have been developed: The so-called "skin test,"[18, 20, 29] in which the reaction to the intracutaneous injection of "coccidioidin" is observed, and two serological tests, one for the demonstration of complement fixation,[22,30,31] and the other for precipitins.[29, 30, 31] It is necessary to mention that a single "batch" of coccidioidin seldom evokes all three of these reactions suitably; accurate standardization and selection must be carried out in each instance before reliable results can be expected.

From the statistical study of the reactions to these tests as observed in thousands of cases, certain facts concerning their chronologic relationship to the progress of the disease have been established.[20,22,29,30,31,32] The application of this knowledge provides additional evidence regarding the portal of entry of the fungus. The significance of each of these tests in this regard is pointed out in the following paragraphs.

Intracutaneous Reaction. The reaction to the intracutaneous injection of coccidioidin is a diagnostic aid analogous to the tuberculin reaction; for this purpose 0.1 ml. of a 1:100 dilution is usually employed. In addition, it may be of value in ascertaining the prognosis[29] during the course of coccidioidomycosis when used in a sort of "quantitation" by ascertaining the degree of response to various dilutions (1:100, 1:10 and undiluted). Clinicians have learned to rely upon a highly positive reaction to a high dilution as indicating good immunologic resistance to the disease; in severe disseminated cases the "titre" is likely to be low or entirely negative. Jacobson,[17] who first applied the intracutaneous test extensively, used 0.3 ml. of undiluted coccidioidin, which indicates the low degree of sensitivity frequently encountered in the severe disseminated infections with which he was dealing exclusively. Thus, if a patient with a cutaneous lesion persistently has no reaction to the intracutaneous test in a dilution of 1:100, it is probable that the lesion is disseminated from a primary pulmonary focus rather than a primary cutaneous infection. Non-reaction to a single cutaneous test might signify only that the infection had occurred too recently for hypersensitivity to have developed.[29] On the other hand a positive reaction might occur if the lesion had arisen by dissemination from a pulmonary focus, provided the patient had developed resistance.

Thus, a positive intracutaneous response gives no clue as to the portal of entry, but persistent nonreaction bespeaks the pulmonary, rather than the cutaneous, route for the primary infection. In the case here reported upon, strong reactivity was noted whenever the intracutaneous test was carried out throughout the course of the disease. It is unfortunate that the test was not done earlier than the fifth week when the reaction was already positive. Undoubtedly, if testing had been started earlier, conversion from negative to positive which must have occurred would have been observed.

Complement Fixation Test. During the past decade the quantitive complement fixation test has proved of practical value in the diagnosis and prognosis of coccidioidomycosis.[22, 30, 31, 32] In general, the more severe the infection, the higher the titer of fixation. Thus, serum from patients with *extensively* disseminating infection usually fixes complement in a dilution greater than 1:16. However, serum from patients with primary pulmonary infection and a *single* extrapulmonary disseminated lesion may fix complement only in low titer. Thus, high-titered fixation of complement in serum, like cutaneous anergy, would be unlikely in a patient with a primary cutaneous infection. Serum of a patient with a primary cutaneous lesion would be expected to have a low titer or per-

haps not fix complement at all. In the present case the titer was only sufficient to be of assistance in diagnosis (Table 1).

The time sequence may supply an additional clue. The ability to react positively to the complement fixation test develops more slowly than to the precipitin test or the intracutaneous injection.[29] Thus, the appearance of a positive complement fixation reaction in high titer early in the course of a cutaneous lesion would constitute evidence against cutaneous primary infection and indicative that it derived by dissemination from an earlier pulmonary infection. Five weeks after the onset of the cutaneous lesion, serum from the patient in the present case did not fix complement. Even when tested at the 16th week, the titer was still very low (slightly positive in a dilution of 1:4). If the immunologic mechanisms of the patient had been sufficiently defective originally to have allowed dissemination to occur from a primary pulmonary focus to the skin, it is more likely that the resulting cutaneous disease would have continued for a longer time, accompanied by a rise in complement fixation titer. On the contrary, the titer never became high and soon began to decline.

Precipitin Test. Precipitins are usually demonstrable in the serum of patients undergoing coccidioidal infection.[30, 31] The titer is not known to have prognostic significance, its principal use being diagnostic. However, the time relationships of the appearance and disappearance of precipitins may give clues as to the recentness of the infection. Precipitins develop before complement-fixing antibodies (although after intradermal sensitivity to coccidioidin) and seldom persist longer than three or four months after infection is acquired. Thus, absence of precipitins in a patient with a recently developed cutaneous lesion proved to be coccidioidal would be likely to indicate dissemination from an earlier pulmonary infection. In the present case, precipitins were strongly present in the first specimen of serum tested (five weeks), had decreased in titer at four months, and when the next test was done at seven months they had vanished. However, precipitins do occasionally persist for a year or so in the serum of a patient with disseminated infection. Therefore, demonstration of precipitins is not conclusive proof that the infection was recently acquired.

Prognosis

Almost all persons who acquire coccidioidomycosis by the primary pulmonary route recover quickly and are thereafter immune to reinfection. Only one or two per thousand, immunologically defective, subsequently have the disease in the disseminated, granulomatous form that often causes death. It would be most unlikely that the disease caused by primary cutaneous inoculation of the organisms would pursue a different course; indeed, since the skin is so highly reactive to the products of the fungus (coccidioidin) in those persons who do acquire immunologic resistance, inoculation by the intracutaneous route theoretically should result in conferring immunity even more quickly and consistently than does pulmonary infection. Since rapid involution of the primary cutaneous chancre and its sequelae should be expected in all but one or two per thousand instances, the continuation of a cutaneous lesion for more than three months should be considered strong evidence against its having arisen by primary cutaneous inoculation.

Criteria for Cutaneous Portal of Entry

Criteria to be met in determining that the skin was the portal in a case of coccidioidomycosis are, in chronological order, as follows:

1. There should be no history of significant pulmonary disease immediately preceding the appearance of the cutaneous lesion.

2. The history should be suggestive of inoculation through a break in the skin at the site of the first cutaneous lesion observed. Simple "injury" such as a bump or bruise should be considered insufficient evidence.

3. Only a short incubation period should elapse, probably between one and three weeks, before a visible cutaneous lesion develops.

4. The primary lesion should resemble a "chancre" as seen in primary syphilis or the primary cutaneous tuberculous complex, rather than an abscess or torpid cutaneous ulcer. The lesion should be a relatively painless, firmly indurated nodule or nodular plaque, with central ulceration.

5. The precipitin reaction to coccidioidin should soon become positive. It should decline somewhat more slowly than if the disease had been present in the lungs for a few antecedent weeks.

6. The response to the intracutaneous injection of coccidioidin should become positive and should increase in sensitivity (1:1000 dilution) unless immunity fails to develop.

7. The complement-fixation reaction should be negative at first, and remain so for several weeks, after which it should be present only in low titer, unless immunity fails to develop.

8. Lymphangitis and lymphadenopathy should develop, but in the region of drainage only. Development of nodules similar to those seen in sporotrichosis may be expected.

9. Spontaneous healing of the "primary" cutaneous syndrome should occur within a few weeks (unless the patient is immunologically defective: This should be anticipated in but one or two per thousand instances).

Criteria for Cutaneous Lesions Arising by Dissemination from the Lungs

The following findings should be regarded as indicative that a cutaneous lesion is not primary but is derived from a previously unrecognized primary pulmonary infection, although it must be emphasized that the absence of these phenomena does not gainsay the possibility:

1. History of an influenzal or other acute respiratory illness (especially if accompanied by pleural pain) a few weeks or months before the appearance of the cutaneous lesion.

2. Persistence of non-reaction to the intracutaneous coccidioidin test with a 1:100 dilution.

3. Positive reaction in high titer to the complement fixation test, especially if observed early in the course of the cutaneous lesion.

4. No precipitins demonstrable if tested between three and five weeks after the appearance of the cutaneous lesion. (This is less significant than the preceding conditions.)

5. No regional lymphadenopathy or inflammatory nodules along lymphatic channels draining the region of the cutaneous lesion, unless secondary bacterial infection is concomitant.

6. Continuance of the cutaneous lesion without involution beyond three months.

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Relationships in Consultation

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• *The cause of medicine is advanced by the proper exchange of services between general practitioners and specialists. As a medical group and singly, physicians stand to benefit by strengthening their relationships; and the one to benefit most of all by this combination of services is the patient.*

Any physician of integrity admits that it is impossible for one physician to know all there is to know about every medical subject. The establishment of rules of conduct to be followed by those who get together to solve a medical problem will promote the use of advisory practice.

THE METHODS by which clinical problems can be solved in situations requiring the combined efforts of general practitioners and specialists are important not only in the immediate problem of treating the patient but with regard also to freedom in the practice of medicine.

It is gratifying that so many of us in private practice are gathering together to pool ideas and strengthen our relationships. We should not overlook the special significance of doing this, or the necessity for doing it. The dangers of central control of the practice of medicine may be lying dormant at the moment but they are not dead. We know that weak relationships or discord among those in private work are powerful and welcome wedges to those who still seek undesirable controls. Even minor disagreements are immediately magnified to bolster their arguments for government-directed medicine.

Only because it is so constantly true is it trite to say that the chief concern of conscientious practicing physicians is the welfare of their patients. The work we do routinely, the fact that we come together at frequent intervals for discussion, the flow of literature that keeps us abreast of the times, experiment and research directed toward providing the public with the highest grade of medicine we know—all these things offer constant and potent evidence of regard for the individual.

We look, however, for added ways to insure independence in the practice of medicine. We find that certain factors are more conspicuous than others, and are therefore most helpful in making the aims of the group apparent. An excellent example, among several such noticeable factors, is the cooperation manifest in consultation.

STRENGTHENING COOPERATION

Good cooperation in consultation offers one of the strongest proofs to the public that we are capable of managing our own affairs. Progress has been made, but consultation is one phase of medicine in which our relationships can and ought to be strengthened considerably to the benefit of patients and the advantage of physicians mutually and singly. Fortunately, what aids the group in this instance also serves to bring about personal fulfillment.

Taking for granted an awareness of the overall picture, in which what we do and how we do it are under constant observation, we may turn attention to the purely personal elements and benefits inherent in consultation.

The purposes of this communication are to suggest what the chief problems are that still surround advisory practice, to outline some of the workable procedures by which to clarify these problems, and thus to promote effective cooperation between general practitioners and physicians who limit their practice.

The work of the general practitioner has long been considered so vital that he has variously been called the bulwark, rampart, backbone, and cornerstone of American medicine. In many places, he is the sole defensive structure available to safeguard the health of the community.

He offers his services in sparsely populated areas as well as in larger centers. Where territories are big, but the inhabitants scattered, he spreads himself over an amount of ground that appalls urban practitioners. In more thickly populated places, often the number of patients and the variety of diseases he treats are equally staggering. No one minimizes the importance of the physician so well informed about so many things and who is called upon to play many varying roles.

It is a man's privilege to choose work for which he is well suited. What he likes to do, he usually does well. The specialist, thinking along these lines, lim-

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its himself to one branch of medicine. His point of view is that, since he cannot hope to know all about every medical subject, he will learn as much as possible about some one angle that has special appeal. Of some 200,000 practicing physicians in the United States, about 20,000 are certified specialists.

Rather than take sides with the many articles that appear in popular magazines, some extolling the accomplishments of those who specialize and others attempting to prove the greater worth of the family physician, we might better bend our interest to determining how we may use each other's skills to the profit of our patients and ourselves, and to the advance of medicine.

In one recent magazine article, the growing insistence upon consultation by the staffs in first-class institutions was referred to as a new-fangled idea dreamed up by enthusiasts going to unnecessary and absurd lengths with theories on modernizing medical procedures. Actually the idea is anything but new. One does not have to read extensively to learn that specialization is as ancient as the Hippocratic oath, and that evidence of consultation dates as far back as medicine itself.

PURPOSES OF SPECIALIZATION

Anyone in practice has had to face the fact at some time that there is a natural limit to one man's ability. He can scarcely expect to bring every case to a successful conclusion by himself. Nowadays we find practitioners more and more frequently calling for advice along special lines. It is definitely not that they are less able, but that such assistance is more readily available.

England tried to exclude consultation from her national medical program. It was not long before it became apparent that the program was harmfully deficient without it, and the plan was then enlarged to embrace some consultation service.

In most areas of this country, we are fortunate that the referring physician can call upon specialists at will. The question arises: When should he call? When should his services be combined with those of a specialist? (Since specialists already confer freely enough among themselves, this point need not be stressed.)

Perhaps the principal indications for calling in a consultant can be stated briefly by outlining a hypothetical case. For purposes of illustration, it will contain more reasons for advisory counsel than would be found in any one case. Suppose that a desperately ill patient has summoned the family doctor. The nature of the illness makes time an important factor. The physician sees that action must be determined quickly, not only because the situation is desperate, but because the family, filled with fear, expresses a lack of faith in the procedure outlined.

The physician himself may be somewhat puzzled as to the diagnosis, or he might want to have his diagnosis confirmed. He may find it extremely difficult to make a statement to this particular family without someone to support his statement. Something may trouble him regarding the management of the patient, or perhaps he merely wishes to share responsibility. Possibly he is not in doubt about anything, but he may reason that the patient, the family, or both, will feel that more is being done if another opinion is added to his. At any rate one thing is certain. The physician must relieve the general tension mounting over the situation. Consultation is his solution.

If the patient has been hospitalized, there is (in the larger hospitals at least) no question whether there should be consultation if consultation would be of any benefit. In fact hospital rules demand it. The demand is most specific in the fields of obstetrics and gynecology—so specific that it occasionally arouses antagonism on the part of those accustomed to less restraint in unstandardized institutions.

Let us suppose that the hypothetical patient is invalided at home. Once it has been decided that consultation would answer a definite need in the case and the additional opinion is sought by the attending physician, or by the patient or the family or all of them—who is it that takes the initiative in calling in the consultant? By all means the physician should assume the responsibility, and quickly, before anyone else speaks up. If he waits an instant too long, he can complicate his problem beyond remedy. It is not necessary to go into some of the weird reasons which so often prompt a layman's choice. It is enough to say that too often the reasons are completely divorced from the qualifications of the specialist chosen to deal with the particular medical problem.

CHOOSING A CONSULTANT

If a consultant has been named before the attending physician has had a chance to speak, but has not actually been summoned, the physician may have only the embarrassment of asking that the selection be left to him instead. This is not quite as bad as if the consultant had already been called, but it is still troublesome, and should be avoided if possible.

Assuming then, that initially or finally the attending physician has his choice, he must choose a specialist he knows to be competent in the confronting situation. At this time, if extreme urgency does not absolutely preclude it, the attending physician

should prepare all possible information and have it ready for the consultant, so that he may be briefed quickly about the case—even to laboratory reports when possible, or x-ray films that might have some bearing on interpretation of the case.

The attending physician, having summoned the best qualified specialist in the community, may have to make a vigorous attempt to suppress feelings of competition and rivalry, just as one would attempt to eradicate any hampering force.

Presumably, the specialist selected is one who is recognized by others to be qualified as a consultant in his specialty. He is known to keep well informed on his specialty, and he has, in consequence of these facts, built up an excellent reputation for skill. Perhaps he comes in from an adjoining area because a small community has no one available in his field, and repeated calls of this kind have given him great and favorable publicity among laymen as well as his colleagues.

The referring physician can well imagine that those involved will be impressed by the entrance of such a figure into the case. They realize he is there because he knows a great deal about a particular medical problem that is at the moment so vital to them.

It is understandable if the attending physician begins to feel a degree of insecurity as he reviews these points to himself. He does not want to lose prestige, but more particularly he cannot afford to be thought of as inadequate. Many questions enter his mind. If the specialist submits a large bill, will his own, in addition, be resented? If the specialist magnanimously makes an insignificant charge, will his appear too big in light of the fact he sought outside advice? Will the consultant's conduct bother him in the course of the case? All of these thoughts can arise to plague him. It is likely that the question of the consultant's conduct gives him the greatest concern.

DEPORTMENT IN CONSULTATION

The innumerable occasions when consultation has proved to be a successful and thoroughly satisfactory course of action attest that the attending physician's anxieties need have no foundation. There are specific defenses against them when they do arise. The only requirement is that the referring physician and the consultant make themselves aware of a few simple and logical rules of procedure. With a minimum of deliberation, a modus operandi can be set up by which the fears mentioned can be allayed, conflict avoided, and advisory practice given the boost it needs to play its role in better medicine.

Assuming that the family physician's own attitude is completely cooperative, there are certain principles of conduct that, if followed, will make the consulting specialist most acceptable. Primarily the consultant must bear in mind that he is called in to work through the physician in charge. Anyone who remains conscious of this will not be guilty of usurping the stage. The ideal consultant, in fact, will go out of his way to keep the physician in charge very much in the picture. When his part has been accomplished, the consultant will even say a few words to those concerned to show that he intends to leave the patient in the capable hands of his colleague.

During his visits, the consultant's attitude will be warm and friendly. His opinions are best stated slowly and with sufficient deliberation to show respect for the situation. If the prognosis as he sees it is not too bad, he may voice his optimism. If hope is not rationally possible, what he says must have been agreed upon previously with the physician in attendance. He must keep in mind, from beginning to end, that he is only a consultant. If he is in accord with the procedure already in operation, he should say so, and not make minor changes in the routine even though for obvious reasons there is considerable temptation to do so.

Under the most favorable conditions, both physicians will see the patient together, although discussion of the case should definitely take place elsewhere than at the bedside—preferably somewhere outside the room. The consultant should never give an opinion without having seen the patient at all. Certainly the hasty "curbstone" consultation is of little benefit to anyone. In other words, the consultant should be provided with the best possible circumstances for a thorough evaluation of the case. If it happens that he is pressed for a statement without notice when alone with the patient, what the consultant says must be dictated by extreme caution. He will be careful in order to protect himself and to guard against leaving behind him a state of hysteria for the family physician to combat if the news is bad.

Fees, of course, should have been agreed upon before the visit if there are any questions on that score. Unless the situation is exceptional, the range of fees for various services is pretty well known to a referring physician with a little experience. If the specialist has been brought in from some distance, or if for any other reasons the customary charges might not apply, a few direct words should straighten the matter out so that there will be no surprises for anyone concerned.

The attending physician is entitled to the assurance that his consultant will not suggest expensive adjuncts to the program previously outlined without talking the matter over first with his colleague, and that he will not burden the patient with overtreatment to justify his entrance into the case. It is not likely that he could honestly disagree with an entire

routine already being followed. Should he disagree wholly, or partially, he has the obligation of discussing his differences with the referring physician before anything is said to the patient. He would then be free to say that he and the attending doctor had agreed on a new program.

THE CONSULTANT'S WITHDRAWAL

After the consultant has seen the patient, has given his opinion and has conducted himself in good form throughout, he is ready to leave the case. This is the time for a friendly word to show, since his work is done, that the case is once more, and completely, the family physician's unless further developments call for his reappearance.

The factors outlined are the main ones to consider in the interweaving of the medical services. Physicians in general practice will find it helpful to look for the qualities mentioned in choosing consultants. If the consultant deports himself in the manner described, there will be no ground for apprehension on the part of the referring physician. Those who specialize will find that their referred work will increase as they give attention to these points. Above all, if the general practitioner and consultant work as a team, interacting as medical needs dictate, they are creating by this active exchange of services the healthy balance which benefits group and individual, and which does so much to advance the cause of medicine.

2001 Fourth Avenue.

CASE REPORTS

- **Nasal Myiasis Caused by the Primary Screw-Worm, Callitroga Hominivorax (Coquerel)**
- **Surgical Correction of Flexion Deformity of the Cervical Spine**

Nasal Myiasis Caused by the Primary Screw-Worm, Callitroga Hominivorax (Coquerel)

DEANE P. FURMAN, *Ph.D.*, Berkeley

SPECIMENS OF A LARVA which proved to be Callitroga hominivorax were forwarded to the author for identification in 1953. These had been collected in the summer of 1952 from a resident of Lone Pine, Inyo County, who had not been out of the vicinity of his home during the period involved.

REPORT OF A CASE

While the patient was reading in his yard a persistent fly buzzed about his nose. He struck at it several times but it was "like a streak of lightning," as he later described it. The fly disappeared, but shortly thereafter a sense of nasal irritation caused the patient to blow his nose. A fly was discharged. During the next two days he experienced slight nasal discomfort with bleeding from one nostril. A physician who examined him then noted no abnormality, but two days later one side of the patient's face was swollen and inflamed. The nasal passages were irrigated and about 25 maggots were removed. Irrigation was then carried out daily for 11 days and about 200 maggots were removed. The patient then completely recovered.

DISCUSSION

This case, apparently the first verified report of human nasal myiasis in California due to Callitroga hominivorax, is rather similar to one described from Kansas by Herms.[1] In that case, however, the patient died as a result of the attack. As early symptoms may be obscure and the tiny first-stage maggots easily overlooked, the possibility of myiasis during the warm months should be borne in mind.

The primary screw-worm is known as one of the most dangerous myiasis-producing flies of the Americas. The parasite must infest the living tissues of a warm-blooded animal in order to complete its life cycle. Normally the adult female fly is attracted to fresh wounds upon which to oviposit. Within a few hours the eggs hatch and the tiny larvae immediately begin to burrow and feed on living tissue, causing increasingly severe injury as they grow. After about one week the mature maggots drop to the ground and burrow in soil to pupate. Within one week to two months, depending on the temperature, the adult flies emerge from pupation.

From the Department of Entomology and Parasitology, College of Agriculture, University of California.

In the United States the primary screw-worm survives throughout the year normally only in the southernmost parts, mainly in southern Florida and Texas. From these sites the flies migrate or are transported as maggots in infested animals to other parts of the country during the warm seasons. During mild winters the flies may overwinter in areas outside their usual range, as in California. A report by Laake[3] indicated that at least three counties in Southern California were infested throughout the year 1950. In all probability this is not an unusual occurrence.

The fly causes tremendous loss of livestock, since untreated animals frequently die of infestation. As indicated by James,[2] man is also often attacked in infested areas.

Acknowledgment

The author acknowledges with appreciation the cooperation of Mr. Fred L. Jones, assistant game manager of the California Department of Fish and Game, who forwarded the specimens for identification and supplied information regarding the patient, and of Dr. Maurice T. James of the State College of Washington, who verified identification of the specimens.

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Surgical Correction of Flexion Deformity of the Cervical Spine

CHRISTOPHER MASON, *M.D.*, LEWIS COZEN, *M.D.*, and LEO ADELSTEIN, *M.D.*, Los Angeles

SMITH-PETERSEN, LARSON AND AUFRANC[4] in 1945 reported five cases in which flexion of the spine was improved by osteotomy of the lumbar spine. La Chapelle[3] reported a similar case but he performed the correction in two stages. Briggs, Keats and Schlesinger[1] improved the deformity by one-stage osteotomy of the lumbar spine. Jones[2] performed osteotomy of the cervical spine in an unreported case.

In the case herein reported upon the deformity was of the neck, not of the dorsal spine.

REPORT OF A CASE

In 1939 a man, then 30 years of age, first noted pain in the neck. Flexion deformity of the cervical spine developed



Figure 1.—The patient before operation. The neck was completely rigid in this position.

and became increasingly severe during the next 12 years. The patient was treated intermittently by intramuscular administration of estrone, neck stretching and application of plaster casts, but he did not consistently follow any method of treatment. By 1951 the deformity was severe (Figures 1 and 2). Although the patient was not in pain, he could not see above the level of his legs when walking. He felt moreover that the deformity made him socially unacceptable and was willing to take any risk for correction.

Osteotomy of the spine was carried out. The patient was placed on his side and the back was supported by sandbags. Nitrous oxide was given by inhalation. Intratracheal anesthesia was not possible because of bony ankylosis of the cervical spine. The skin over the cervicodorsal junction was infiltrated with 1 per cent procaine solution and an incision was made in the midline over the spinous processes from C 4 to D 3. The spinous processes at this level were exposed subperiosteally and the spines of D 1 and D 2 were removed with a bone rongeur. The dura and cord were retracted to one side and the body of D 1 was sectioned with a long thin osteotome. The cord was then retracted to the opposite side and the body of D 1 was again sectioned at the same level on the other side. (Apparently the pleura was punctured in the process, for a sucking noise was heard. A tiny hole in the pleura was easily and promptly plugged with a small piece of muscle taken from the adjacent musculature.) The head could now be extended slightly, but removal of more bone in the shape of a wedge was necessary to obtain appreciably more extension.

The wound was closed in layers. Crutchfield tongs were placed in the skull, the patient was placed in bed in a supine position, and 15 pounds of traction was applied to the tongs.



Figure 2.—Lateral view of the cervicodorsal spine before osteotomy.



Figure 3.—Patient soon after operation with neck brace in place.

After two weeks, extension had improved considerably. Hoarseness developed, apparently owing to traction palsy of the recurrent laryngeal nerve. Traction was diminished slightly and the hoarseness immediately disappeared. A plaster of paris jacket extending from head to pelvis was applied four weeks after the operation and the skull tongs were then removed. Three weeks later the jacket was removed and a cervical brace with a head band attached was applied (Figure 3).



Figure 4.—Lateral view of the cervicodorsal spine seven months after osteotomy. The defect at the level of D 1 appears to be filled in.

COMMENT

Two factors entered into selection of the site of operation in the present case: To avoid injury to the vertebral arteries an area distal to C 7 had to be chosen; and since the apex of maximum deformity was between C 7 and D 2, osteotomy was carried out at D 1.

The only known complication that developed postoperatively was transient recurrent laryngeal paralysis. The patient had foot drop as a result of a previous accident, and although the degree of drop was not measured before operation, apparently the procedure caused no change in it. Nine months after the operation correction was still being maintained (Figure 4).

SUMMARY

A case is reported in which severe flexion deformity of the neck was relieved by osteotomy of the cephalic portion of the dorsal spine.

2007 Wilshire Boulevard.

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EDITORIAL

Tactful Collection of Overdue Accounts

No phase of the patient-physician relationship offers more of a challenge or is more difficult than the problem of patients delinquent in payment of bills for medical services. While some patients are chronic offenders — medical deadbeats — who go from physician to physician and dentist to dentist, never paying any of them, there are others who pose a problem simply because "pay the doctor last" seems to them to be quite orderly.

Persons of the latter sort are of major concern, for they are in most part honest, hardworking and conscientious. They habitually promptly pay the rent and the installments on their cars, TV sets, and refrigerators, yet set aside all medical bills to be paid some time in the future. It is perhaps a compliment—albeit a little wry from the physician's point of view—that they seem to feel the doctor not only can wait but is more willing to do so than other creditors. Not unknown in this order are otherwise upstanding citizens who, even after discussing and making agreeable pecuniary arrangements with a physician, upon restoration to health decide that the fee is too high and refuse to pay.

Physicians have neither time nor inclination to make personal demand for payment from each patient who does not pay. Individual contact by a physician's secretary in a busy office also is much too time-consuming to be practicable. If the delinquent accounts are sent to outside sources for collection, there is risk of losing the good will of the patient not only toward the physician immediately concerned but toward physicians as a group, not to mention the commission that must be paid.

Recognition that tact of the highest order is needed to meet the situation, especially at a time when it seems there is general willingness to hold physicians to blame for all increases in the cost of medical care, has led to the formation of medically-sponsored collection agencies. Under the paternal eye of the American Medical Association, many of the county medical societies throughout the nation have organized a "Bureau of Medical Economics." Here in California, the Alameda-Contra Costa, Santa Clara, San Diego, San Joaquin, Orange and San Francisco county medical societies have pioneered in sponsoring such bureaus. Unique in scope and operation, the bureaus work on a non-profit basis, with each physician who enrolls (at no cost to him) becoming an owner-operator. Overhead is kept to a minimum, and any profit reverts to the members.

In addition to saving money the physician also is secure in the knowledge that the agency representing him in discussions with his patients is acting in accord with the ethics and standards of organized medicine. There is no immediate threat to garnishee wages, to attach cars and personal property, or to resort to any of the many other objectionable commercial practices that cause antagonism and in many cases inflict unwarranted hardship.

Instead, discussions with patients who are not paying money they owe to physicians are carried on in an informal, friendly and sympathetic manner. The reasons for non-payment are explored, overall advice as to budget given when required, and a system of payment arranged which is convenient for the patient. In cases of dire pecuniary distress, recommendations for adjustment of charges are made which invariably are agreeable to the physician and satisfactory to the patient.

It is obvious that the public relations value of this modus operandi, in which a delicate problem is dealt with in a way a physician would like to deal with it himself if he had the time, is incalculable. More widespread utilization of such medically-sponsored projects will do much to remove a source of irritation to physicians and at the same time win new friends for the medical profession.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

The Treatment of Cancer with Arginase

A Report by the Cancer Commission of the California Medical Association

IN THE SUMMER of 1951, inquiries were made of various members of the Cancer Commission of the California Medical Association concerning the usefulness of arginase in the treatment of human cancer. These inquiries were stimulated by the publication of a "Symposium on Arginase in Cancer Research" in a bulletin issued by a medical foundation in California, and by reports emanating from a physician connected with the Hollywood Presbyterian Hospital. The commission conducted an investigation into the nature of the treatment and the results attributed to it.

1. *Nature of Treatment Method*

Arginase is an enzyme which occurs in the liver and other mammalian tissues. It is said to split arginine into urea and ornithin. It is apparently of relatively low concentration in malignant tissue. Attempts have been made for some years to treat cancer with arginase, the drug having been given by various parenteral routes, notably by vein. The question arises from time to time as to the quality and purity of the arginase being used, and as to the possibility of contaminants being the "beneficial" factor, if such exists. The name of the agent was changed by one group to hepasyn in 1953.

2. *Proponents*

The persons prominent in the current arginase discussion are essentially as follows:

Wesley G. Irons, D.D.S., formerly connected with the University of California College of Dentistry.

Ved Vrat, a Hindu biology student, formerly associated with Dr. Irons and subsequently connected temporarily with the Permanente (Kaiser) Foundation.

E. Forrest Boyd, M.D., a Los Angeles physician and surgeon, formerly Chief of Staff at the Hollywood Presbyterian Hospital.

Leo W. Hosford of San Francisco, a drugless practitioner (graduate of the San Francisco College of Drugless Physicians, 1934) and operator of a mortuary college.

Dr. Irons was graduated as a dentist in 1922 and practiced for some years in San Jose. From 1922 to 1943 he worked variously as a student at the University of Southern California, as an anatomist in the Walt Disney Studios, as a director of "research" in the Kern County General Hospital, and reportedly as a shipping clerk and a high school teacher. From 1943 until 1950 he was an instructor in the U. C. College of Dentistry. His interest in cancer reportedly began in 1939 when a relative died of the disease. He apparently became convinced that arginase could control or cure cancer, and proceeded to experiment with it. In 1949, Irons and Vrat were associated briefly. Then Vrat left to join Permanente.

In February 1950, application for a research grant was filed with the Committee on Growth of the National Research Council, from the American Institute of Radiation, in which Dr. W. G. Irons was listed as principal investigator and "Ved Vrat, Histologist" as chief assistant. In August 1950, a letter

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that requested withdrawal of the application stated: (1) that Dr. Irons was no longer with the American Institute of Radiation, and (2) that "the Institute is now under the sponsorship of the Permanente Medical Foundation, and has severed all connections with the Electronic Medical Foundation of San Francisco."

Mr. Vrat came to the United States from India in 1946. He entered Stanford but failed to complete the requirements for Ph.D. in the biological sciences. He was disqualified by the University after eight quarters. In 1949 he was a laboratory technician at the Richmond (Calif.) Hospital and in 1950 was listed as Director of Cancer Research at the Permanente Foundation.

In July 1951 Mr. Vrat published three articles indicating control of mouse cancer by arginase in the *Permanente Foundation Medical Bulletin.* Subsequently, Dr. Sidney Garfield, then director of that foundation, asked the Cancer Commission for a list of the names and addresses of physicians in the United States interested in cancer control, in order to send them the *Bulletin.* By October 1951 the rumors concerning a new cancer "cure" reached such proportions that the following letter was released by the Permanente Hospital to the secretary of the Cancer Commission and others:

THE PERMANENTE HOSPITALS
Broadway and MacArthur Blvd.
Oakland 11, California

October 9, 1951

Dear Doctor:

It has come to our attention that there are rumors regarding a claim for cancer cure by the use of arginase and it has been attached to the Permanente Foundation.

We have been working with arginase in the treatment of some mouse transplants of cancer with encouraging results. These results have been published, a copy of which is enclosed. We have used arginase on two patients; one a primary carcinoma of the breast, inoperative, with metastasis to the brain and lung. This patient died during the course of treatment. A second patient with a synovioma of the knee joint, treated by amputation of the leg, but with present widespread metastasis to the lung was treated. To date, this patient has shown no encouraging response to the arginase treatment. These are the only patients that have been treated by any member of the Permanente Hospital or by arginase prepared by our Research Department.

We understand there are other groups, particularly in Southern California, who are using some form of arginase therapy on patients, but we have absolutely no connection either personnel or materialwise with these groups.

I assure you that we have made no claims to cure cancer, as the results of the two patients that we have treated would indicate. Our work is being carefully controlled and we have no intention of publicizing the use of arginase on humans until proper scientific results are obtained. Very truly yours,

THE PERMANENTE HOSPITALS
(signed) C. C. Cutting, M.D., Chief of Staff

In 1953 Vrat treated some leukemic mice supplied by Dr. A. C. Griffin of Stanford and claimed beneficial results. Mimeographed copies of a manuscript bearing his and Dr. Griffin's name were released in the East and caused a flurry of excited speculation. The manuscript was withdrawn at Dr. Griffin's insistence.

In August 1952 Vrat's connection with the Permanente (Kaiser) Foundation was terminated. Dr. Eaton M. MacKay reportedly continued but did not publish further arginase studies.

Dr. Boyd is a Los Angeles physician and surgeon who was graduated from Stanford School of Medicine in 1919.

Mr. Hosford is a drugless practitioner who operates the San Francisco College of Mortuary Science. In 1950, along with Drs. Irons, Boyd and others, he founded the *Charles E. Irons Memorial Cancer Foundation.* This was incorporated on June 4, 1951, and steps were reportedly taken to raise some $135,000.

Mr. Hosford aided Mr. Vrat and Dr. Irons in their arginase work. He notified the dean of one of the medical schools in California that excellent results were being obtained in cancer, using arginase.

On April 21, 1953, Mr. Hosford addressed to the San Francisco, the California, and the American medical associations the following letter:

SAN FRANCISCO COLLEGE OF MORTUARY SCIENCE
America's Premier College
1450 Post Street, San Francisco 9, California
JOrdan 7-0674 and 7-0675

April 21, 1953

Office of the President
DR. L. W. HOSFORD

American Medical Association
535 North Dearborn
Chicago, Illinois

Gentlemen:

We are sponsoring, in collaboration with the Charles E. Irons Memorial Cancer Foundation, a project in basic research with relation to malignancy.

Heretofore, clinical work on humans has been carried on in Los Angeles under the supervision of E. Forrest Boyd, M.D.

We are now setting up an institutional research project at our college at 1450 Post Street, San Francisco, California. We earnestly urge your full and complete cooperation. Should you be interested in this project and in cooperating with us, would you be good enough to advise us, and we will then endeavor to work out arrangements with you as to the nature and extent of your cooperation.

Very truly yours,

SAN FRANCISCO COLLEGE OF MORTUARY SCIENCE
Dr. L. W. Hosford, President

This was acknowledged by the Cancer Commission on April 23, 1953, with a request for information concerning the "institutional research project." No reply was received.

Since the Commission was receiving inquiries

about the cancer treatment project, the secretary of the Commission visited the college on April 30, 1953. He found a small treatment unit, with a few outpatients waiting to be seen by Dr. M. P. Ream of San Leandro. He was informed that Dr. Boyd visited the unit only on Tuesdays or Wednesdays. There were no bed patients. In one room was a gynecological table, without any visible examining instruments or linen. No nurses were visible. A full report of the visit is available in the files of the Commission.

While Dr. Hosford wrote to the medical associations on College of Mortuary Science letterhead, he addressed a prospective patient on Memorial Foundation paper as follows:

President-Research Director
WESLEY G. IRONS,
D.D.S., A.B., M.A., M.S.

Secretary-General Manager
LEO W. HOSFORD, D.P.M.

Vice-President-Medical Director
E. FORREST BOYD,
A.B., M.D., F.I.C.S.

Treasurer-General Counsel
UGENE U.BLALOCK, A.B., J.D.

CHARLES E. IRONS MEMORIAL CANCER FOUNDATION

April 14, 1953

Directors
Wesley G. Irons,
D.D.S., A.B., M.A., M.S.
E. Forrest Boyd,
A.B., M.D., F.I.C.S.
Leo W. Hosford, D.P.M.
Ugene U. Blalock, A.B., J.D.
George E. Chapman, M.D.
George H. Hauerken, LL.B., LL.M.
Leon S. Utter
Edward M. Elliott
J. L. Cannon

Principal Office
1450 Post Street
San Francisco 9, California

Branch Office
727 W. Seventh Street
Los Angeles 17, California

Miss C.
Grandview Boulevard
Los Angeles 34, California

Dear Miss C.:

At last we are able to announce the opening date of our new cancer research treating center in San Francisco, which will be the central point of research of our organization.

The date will be Monday, April 27th, at 1450 Post Street, which is the college building of the San Francisco College of Mortuary Science, the institution under whose auspices this project has been made possible.

Doctor Irons, Doctor Boyd and myself will all be in New York the latter part of this week for a few days and will return to get the treatment started as above stated, on April 27th.

Would you please write me by return mail letting us know if you are still interested in taking these treatments. Would you also see that all of your records together with their biopsies, x-ray reports, etc., etc., are referred to E. Forrest Boyd, M.D., Supervisor, Research Center, 1450 Post Street, San Francisco 9, California. Please do this immediately so we can know how many will arrive and have all applications for treatment in well in advance so there can be no delay in carrying out the program. Doctor Boyd, as stated, will be the Medical Supervisor, and is a man with whom you are all acquainted.

Looking forward to seeing you and your mother on the above date, and hearing from you at the earliest date possible, I am,

Sincerely yours,

DR. L. W. HOSFORD
General Manager

3. *Experimental Evidence Offered*

No formal experimental evidence was offered to the Cancer Commission by the proponents of arginase in 1951. However, a paper reporting some experimental work was subsequently published by Drs. Irons and Boyd in *Arizona Medicine*. This paper quoted a 1946 publication of Irons (*Journal of Dental Research*, 25:497) dealing with subcutaneous and intraperitoneal injection of arginase prepared from fresh beef liver and the reactions thereto in twenty Hamilton-strain white mice. It also quoted a 1947 paper by Irons and Wiswell (Science, 106: 2756) reporting some tests on C_3H cancer-strain mice. A number of mice with "spontaneous mammary carcinomata" were injected with arginase: "The tumors shrank; differential staining methods (Von Kossa) for calcium were positive."

One animal was given arginase daily for three days. "Five days later when the tumor was removed, decalcification was necessary before this mass could be sectioned for microscopic examination."

One animal was given arginase directly into the mesial half of the tumor. After three days "histological examination showed the distal portion to be typically malignant, while the proximal half presented a picture of innocence."

The authors concluded that direct intratumoral injection of arginase produced effects identical with intraperitoneal administration—namely, a 28 per cent reduction in general tumor growth, and a 26 per cent decrease in the ratio of tumor length to weight.

4. *Clinical Evidence Offered*

At the request of the Cancer Commission, and by invitation of Dr. E. F. Boyd, Dr. Ian Macdonald was present at a demonstration of clinical results presented to the Cancer Committee of the Hollywood Presbyterian Hospital on February 20, 1952. Two groups of patients were discussed. The first ten had been observed by a subcommittee of the cancer committee of the hospital; the second ten were cases chosen by Dr. Boyd as being perhaps more representative of results.

Case histories were presented as follows:

(1) Mrs. G., an 88-year-old woman with a breast tumor since 1949. When first seen by the Tumor Board the left breast was completely infiltrated, with ulceration of the skin; there were bilateral axillary and left supraclavicular nodes. Treatment with arginase began on Aug. 6, 1951. Fifty-nine treatments were given. The patient died on Oct. 6, 1951. The pathologist, Dr. Andrews, stated that the original biopsy showed a well-differentiated carcinoma, and that the same neoplasm was seen in sections from the autopsy, with areas of necrosis and fibrosis. The was *no difference* in the pre- and post-treatment microscopic sections.

(2) Mr. H., a 62-year-old male with bronchogenic carcinoma proven by biopsy on July 19, 1951. He had dyspnea, weakness and cough; pleural fluid was aspirated but showed

no cancer cells on smear. Treatment began on July 13, 1951, a total of 50 treatments with arginase was given and the patient died on September 9, 1951. Dr. Benz [radiologist] reported that the major portion of the left side of the chest was opaque, that there was a posteriorly placed mass and there was an osteolytic metastasis to the left scapula. Mrs. Hilliard [laboratory technician] reported that the anti-enzyme values indicated a rapid process and that the anti-chymotrypsin rose steadily under treatment.*

(3) Mr. M., a 37-year-old male with a history of two to three years of diarrhea. On Aug. 24, 1950, a colon resection was done for carcinoma of the sigmoid, at which time metastases to the liver were present. In January 1951 he had pain along the left costal margin and in the left shoulder and by May 1951 had lost 40 pounds in weight. On July 20, 1951, there was a large lower abdominal mass and treatment with arginase was begun. By Aug. 3, 1951, there were no changes in physical findings but the patient was undergoing progressive deterioration and died on Aug. 21, 1951. Dr. Andrews reported that the surgical specimen showed a fairly well differentiated adenocarcinoma and that a biopsy of the liver showed the same neoplasm. At autopsy the carcinoma was still well differentiated, there was fibrosis and degenerative change. Dr. Benz stated that a gastrointestinal series showed gastrocolic and enterocolic fistulae. Mrs. Hilliard reported that 33 determinations of antienzymes in blood serum were done and 23 determinations of urinary uropepsins with no evidence of improvement in the pattern at any time. The later findings indicated good adrenal function at first which became worse after treatment began.

(4) Mr. M., a 46-year-old male. In January 1949 developed a lump in the right knee which became larger and was biopsied in June 1949 and showed a fibrosarcoma. On July 25, 1951, the primary lesion measured 9 x 9 x 5 cm. Sixty-seven treatments with arginase were given and the mass was thought to be possibly smaller and softer. The patient had metastases to regional nodes and lungs. Amputation was done. Dr. Andrews stated that the original biopsy showed an active fibrosarcoma with many mitotic figures. The amputation specimen showed necrosis of the tumor with no mitotic figures. There was a collagen increase. Dr. Boyd reports that the patient now has considerable weakness and a cough. He has had no treatment since December 1951. Dr. Benz demonstrated bilateral pulmonary metastases and six weeks after treatment began all of the metastases were increased in size. Mrs. Hilliard reported that the anti-enzyme pattern showed no improvement.

(5) Mrs. V., a woman with age not given. Developed swelling and retraction of the nipple in January 1950 and an increasing mass in the breast. In December 1950 there were multiple involved nodes in the left axilla. The patient had weakness and pain in the back. Ninety-six treatments with arginase have been given since July 19, 1951, at which time the left breast contained a 6 x 8 cm. central tumor, and there were multiple enlarged hard fixed nodes in the left axilla. Biopsy on Aug. 29, 1951, showed metastatic adenocarcinoma. Last examination on Feb. 19, 1952: The primary lesion of the breast measured 8 cm. in diameter, there was a left axillary mass 3 x 3 cm., the liver edge was hard and irregular and there was a hard mass occupying the umbilicus. This patient stated that she "feels no better." Dr. Andrews stated that the lesion was a well-differentiated adenocarcinoma with fibrosis and no mitoses. Dr. Benz reported that the chest showed pulmonary fibrosis with no evidence of metastases. Mrs. Hilliard reported that the anti-chymotrypsin fell from 6.5 before treatment to 5.0 in October but by November had risen unfavorably to 8.5.

(6) Mrs. E., a 40-year-old woman. In May 1950, noted a tumor in the breast which subsequently was treated with Koch serum, testosterone and Premarin® with gradual increase in size of the breast tumor. On November 14, 1951, the breast was small, hard and fixed to the chest wall; there was involvement of the axillary nodes on the right side and bilateral supraclavicular node involvement. A biopsy showed scirrhous carcinoma. This patient had 121 treatments with arginase and last examination on Feb. 18, 1952, showed that the mass in the breast was larger, with more skin involvement, and moderate increase in involvement in the axillary nodes which were now fixed to the scapula. She had gained weight. Dr. Andrews stated that he had no microscopic section to review. Dr. Benz said that radiographic examination showed no evidence of metastases. Mrs. Hilliard reported that six determinations had been done. The last one on Dec. 18, 1951, showed unfavorable progress.

(7) Mr. X., a male, aged 56, name not available. In December 1950, nephrectomy was done for a carcinoma of the renal cortex. In June 1951, fractured the right forearm and complained of pain in the back with demonstration of metastases and x-ray treatment to both areas. This patient had had 68 treatments with arginase although the date of beginning such treatment was not stated. At last examination, Feb. 19, 1952, the patient said he felt better but he had severe anemia, was more emaciated, weaker and dyspneic. There was a mass in the right side of the abdomen with induration of the entire abdominal wall. Dr. Andrews reported that slides made elsewhere were typical of a clear cell carcinoma with areas of degeneration and hemorrhage. Dr. Benz demonstrated pyelographic studies done elsewhere with a mass at the lower pole of one kidney. In October there was radiographic evidence of metastases to the ribs and lungs and the last examination in February 1952 showed a mass of pleural effusion filling the entire right side of the chest, extensive destruction of ribs, new pulmonary lesions and a pathological fracture of one radius. Mrs. Hilliard reported that ten tests had been done from November through December showing a moderately progressive pattern, and no essential change.

(8) Mrs. B., a 50-year-old woman. From 1929 to 1930 she had x-ray treatment to her leg for removal of hair. In 1942 she injured her patella and an ulcer developed in this area which became larger and then improved but did not heal. In 1947 a "cyst" of the patella was removed which on microscopic examination showed epidermoid carcinoma. A graft was used for closure. From 1947 to 1951 the patient was well until she suffered another injury to the leg with new ulceration and pain for which a sympathectomy was done. When seen on Nov. 26, 1951, the right leg showed an indolent granular ulcer at the site of the previous operation and on Dec. 18. 1951, biopsy showed epidermoid carcinoma Grade I to II. Since the above time she had been on treatment with arginase, number of treatments not stated. The patient was presented to the group on Feb. 20, 1952, and on questioning said that she felt better. There were three areas of ulceration 2½ x 1¼ inches and 1 inch and ½ inch respectively in size and the base of these ulcers was reported as being "thicker." Dr. Andrews reported the original biopsy and said that there had been no additional biopsy. Dr. Benz reported that radiographic studies showed no change.

(9) A 32-year-old male. name not obtained. In March of 1950 a tumor in the right axilla was biopsied and showed

*Dr. Philip West and Mrs. Hilliard reported on the response of patients by means of the antichymotrypsin and antirennin values of blood serum.

metastatic carcinoma, primary site undetermined. Eight x-ray treatments were given at the Los Angeles Tumor Institute. In February 1951 there was recurrence of the axillary lesion with pain in the shoulder. In May 1951, further x-ray treatment was given. In November 1951 pain recurred with diffuse rales in the lungs and winging of the right scapula. Thirty-two treatments with arginase were given and the patient died one month after beginning treatments. Dr. Andrews reported that autopsy showed a primary carcinoma of the ileum with metastases to the brain and death from cerebral hemorrhage. The microscopic section showed no evidence of change from the treatment given. Dr. Benz reported radiographic findings of hilar adenopathy and miliary pulmonary metastases, which grew progressively.

(10) Mrs. W., a woman, aged 57. In November 1950 a lump in the breast was found and in January 1951, biopsy showed cancer. The lesion, however, was in the underlying chest wall and she went to the Mayo Clinic where some surgical procedure was done and ten x-ray treatments were given and some months later four x-ray treatments were given. The excised material showed chondrosarcoma. Treatment with arginase began on Aug. 12, 1951, and 198 treatments were given. Examination on Feb. 19, 1952, showed around the inframammary scar several soft small nodules; the fourth rib was thickened and stony hard. There was also a chondrocostal mass in the area of the seventh rib. At this point it was learned that on Feb. 1, 1952, the patient had a resection of the chest wall by Dr. Bert Cotton but the disease was so extensive that residual tumor was left attached to the pericardium. Dr. Andrews reported that comparison of the original sections from the Mayo Clinic with the surgical specimen of Feb. 1, 1952, showed definite changes following treatment with arginase, consisting of increase in fibrous tissue with degeneration of cartilage and encapsulation of the tumor.

Dr. Boyd then announced that the present review of his project was being done over his protest, and the reasons for protest were: (1) inadequate time had elapsed to permit proper evaluation; (2) the dose of arginase had not been established as he now gives 20 times greater dosage than at the beginning of the project; (3) an attempt at evaluation on the basis of inadequate evidence is unscientific. He said on the other hand if present review was for a guide as to future conduct of the project, that was satisfactory. He stated that, for the benefit of the representative of the Cancer Commission, the choice of the ten cases supervised by the committee at the Hollywood Hospital was their own and not his. Three of these cases he said fell short of one of the criteria, that they failed to survive for six months after the beginning of treatment. A fourth case he stated was an unfair selection. Concerning Case No. 5 listed above, he thinks there is little difference between the patient's condition now and before treatment. Case No. 6 he thinks should be discarded although he gave no reason for this belief. Dr. Boyd stated that in all over 8,000 doses of arginase given intravenously there had been no death due to the use of the drug in a total of 125 cases. He said that arginase reduces the amount of narcotic the patients require, that they are happier, that some of them gain weight, and that 20 of the patients he has treated have returned to their full-time occupations. He stated that Case No. 10 above was pronounced by the Mayo Clinic to be inoperable, and that arginase made the lesion operable. He said that live patients are all that count and one should see the patients to be convinced of the value of the treatment. Patient No. 10 listed above then was brought in. She embraced Dr. Boyd affectionately and stated that she felt wonderful.

(11) Dr. Boyd then showed a Mrs. N. who had metastases to the left lung from a carcinoma of the breast as demonstrated on Jan. 5, 1950. On April 28, 1950, there was radiographic evidence of lymphogenous involvement of the lung and by June 6, 1951 the left lung was completely obscured. This patient had x-ray treatments in February, March and June 1951 and also had testosterone during these months. Dr. Boyd did not say how much arginase this patient had had or when the treatment began. On Oct. 13, 1951, Dr. Benz showed films with extensive changes in the left lung which he interpreted as being postradiation, as x-ray treatment had been given to the entire left side of the chest. The radiographic appearance in January 1952 was static. Dr. Boyd claimed credit for arginase that this patient was well and had been back at work for ten months.

(12) A child was then shown who at 18 months of age in May 1950 developed epileptic seizures, and was admitted to Children's Hospital in January 1951. Exploration showed a glioastrocytoma of the third ventricle, a biopsy being done at that time. The child had been under treatment with arginase since May 14, 1951, still had seizures and when shown to the group had severe strabismus, was unable to walk a straight line; and it was stated that at home the child was equipped with a small football helmet to prevent injury to the head because of her constantly walking into walls and objects in the room. Dr. Boyd stated that since treatment with arginase the child's "word power" had improved. It was then learned that following the exploration the child received x-ray therapy given by Dr. Robert Freeman in Pasadena.

(13) A child about age three (J.R.) on Sept. 7, 1951, showed a lump on the back of the head which was biopsied and showed fibrosarcoma. Films in Sept. 1951 showed an osseous defect in the occipital bone from without, a sharply demarcated area. The soft tissue tumor was surgically resected, after which treatment with arginase was given. Films taken in January and February showed progressive healing of the former bone defect so that now it is completely bridged by callus. Dr. Benz interpreted these radiographic findings in the skull as being most likely due to pressure erosion of the overlying tumor with an aseptic osteomyelitis. Dr. Boyd maintained that the bone was destroyed and that healing was due to arginase.

(14) A 59-year-old male (Mr. R.) had an adenocarcinoma of the lung proven by bronchoscopic biopsy in October 1951. He was dyspneic and it was difficult for him to talk when treatment was begun with arginase in October, since which time 112 treatments had been given. The patient was shown to the group. He said he still had some cough and had nausea from the medicine which he received but no longer had bloody sputum. Radiographic findings on June 12, 1950, and Nov. 2, 1950, showed a slowly growing lesion at the right hilum, on Jan. 2, 1951, atelectasis of the right upper lobe, on Oct. 25, 1951, extensive involvement of the right lower half of the lung. Further x-ray examination on Jan. 15, 1952, showed a right pneumothorax following an exploratory operation at Sawtelle, while on Feb. 18, 1952, the entire right side of the chest was completely dense.

(15) A woman, Mrs. S., age not given, developed abnormal uterine bleeding in 1948, and was treated by surgery and irradiation at intervals up to 1951 for metastases invading the pelvis from a primary adenocarcinoma of the uterine cervix. Gastrointestinal x-ray examination on Feb. 5, 1952, showed a partial small bowel obstruction and the presence of a lower abdominal mass. Prior to this time the patient had had 100 treatments with arginase and Dr. Boyd stated that the perineal floor which was tight had now be-

come relaxed. At surgery on Feb. 12, 1952, the right half of the colon and some of the ileum was resected. Pathological examination showed the specimen to consist of a mass of loops of bowel bound together by dense fibrosis with a few small foci of cancer cells stated by Dr. Andrews to be present. Mrs. Hilliard reported that this patient was always in positive nitrogen balance.

(16) A Mrs. S., who had an adenocarcinoma of the right breast and radiographic examination Nov. 29, 1951, showed bilateral pleural effusion with nodular densities in the left pulmonary field. On Feb. 18, 1952, effusion was less and there were areas of patchy atelectasis. This woman's original treatment was on Feb. 20, 1951, when she had a right radical mastectomy and this was followed by postoperative x-ray therapy. On five occasions pleural fluid had been aspirated but no smears were obtained. She had severe dyspnea at the time the abnormal radiographic findings were demonstrated and Dr. Brown (radiologist) indicated his belief that the findings at that time were more consistent with cardiac failure than with metastatic disease.

(17) A 33-year-old woman (Mrs. S.) had a squamous cell carcinoma of the uterine cervix for which irradiation was given in February 1949, at the Hollywood Hospital. Following this she was stated to have an abdominal mass. On Feb. 6, 1951, treatment with arginase was begun and Dr. Boyd stated that the patient was now perfectly normal, and it was possible now to do a pelvic examination whereas this was not possible before arginase was given. Dr. Brown stated that the lesion was treated with 7,000 milligram-hours of radium and that x-ray treatment was given from Aug. 29 to Oct. 25, 1949, and from December to January 1950, there was a depth dose of 8,000 r in the midpelvis and 4,000 r in the perimetria. On Jan. 13, 1950, examination by Dr. George Sharp showed no evidence of disease.

(18) A male, age and name not obtained, on March 10, 1951, had a pneumonectomy at Sawtelle for a squamous cell bronchogenic carcinoma in the left lower lobe with infiltration of the pulmonary vein. On May 14, 1951, he began arginase treatment and he was said to have gained 40 pounds in weight and to be working regularly although he had a chronic cough. Serial radiographic examinations were reported from Sawtelle as showing no change since the operative procedure.

(19) A women with carcinoma of the cervix, name and age not obtained, with spread to retroperitoneal nodes, had exploratory operation elsewhere and was brought to Hollywood Hospital by ambulance. The onset of her disease was in February 1950 with uterine hemorrhage, and on July 6, 1951, she was explored and said to be inoperable. Then Dr. Boyd stated that the microscopic diagnosis was leiomyosarcoma of the uterus with abdominal spread. Before beginning treatment with arginase she had had two abdominal masses; she now had three and she would soon be eligible for surgical treatment.

Dr. Boyd then summarized his ideas by saying that arginase had prolonged the lives of 40 patients long beyond their natural expectancy, that 21 of them are back at work, that there has been no damage in any instance, and that some inoperable cancers have been converted to operable. He said that if his premise is correct new vistas are being pioneered. Radiographic findings must be interpreted in an entirely new light (as in cancer of the lung which may seem to be growing denser under treatment, due to fibrosis and deposit of calcium in the tumor with arginase).

He also stated that this treatment opens a new field in microscopy and that new methods of staining and study of tissue are necessary to interpret properly the changes in cancer produced by arginase.

Surgery has an entirely new future in the treatment of cancer, he said, as more than 50 to 75 per cent of cancers can be made operable, he said, by treatment with arginase. Dr. Boyd stated he had a number of patients then waiting for operation who have been made operable by treatment with arginase.

The internist also has a new vista in the field of cancer, Dr. Boyd said, with different symptoms to be interpreted in the light of this new treatment with the necessity of supporting adrenal function along with the use of arginase. He mentioned that insulin does not cure all diabetics.

Dr. Boyd stated that four years of work and a vast amount of money are required. The patients so far treated have spent more than $150,000 at the Hollywood Hospital. Cutter Laboratories, he said, had signed to pursue the investigation of arginase and had assigned a full-time research man to begin work at the Hollywood Hospital in the week of Feb. 25, 1952. [Cutter Laboratories later withdrew. See later paragraph: 9. *Consultant and Other Reports.*]

(20) Dr. Rusche was then asked by Dr. Boyd to describe a case of his, and Dr. Rusche stated that the man had carcinoma of the bladder which after treatment was less vascular, but that there was now extensive spread of tumor posterior to the bladder.

This concluded the session.

5. *Autopsy Data Offered*

The proponents offered no autopsy data to substantiate statements that arginase had verifiable effects on cancer in terms of convincing tissue changes or tumor arrest.

6. *Experimental Evidence Developed by the Cancer Commission and Independent Investigators*

Immediately after the publication of the "Symposium on Arginase in Cancer Research" referred to in the introduction, the Cancer Commission made extended efforts to secure some arginase for research purposes. Some of the drug was promised but none was forthcoming for several weeks. Finally, through the kind services of Dr. Cecil Cutting, Mr. Vrat made available sufficient arginase for Dr. Winsor Cutting to treat two mice that had cancer. The mice died of cancer. Subsequently Dr. Cutting checked the findings on 30 animals, with similar results.

Dr. A. C. Griffin, associate professor of biochemistry, Stanford University, informed the secretary of the Commision on September 24, 1952, that he had completed three series of studies of the effect of arginase on leukemic mice. He wrote: "Right now, I am of the opinion that this drug has little effect on the course of the leukemia with which we are working."

Dr. M. B. Shimkin reported in 1951 that Dr. David Greenberg, professor of biochemistry at the University of California and one of the world's outstanding authorities on arginase, could not confirm shrinkage of tumors in experimental animals with cancer. The animals died of cancer in the usual manner.

Dr. C. C. Stock, chief, Division of Experimental Chemotherapy, Sloan-Kettering Institute for Cancer Research (Memorial Center for Cancer, New York City) conducted a series of tests in conjunction with Dr. Irons in 1953, injecting groups of cancer-bearing animals (C_3H/ba mammary adenocarcinoma in C_3H mice) with arginase supplied by Dr. Irons. No significant inhibition in growth and no tumor regression was observed. (Letter to Cancer Commission, June 15, 1953.)

7. Clinical Evidence Developed by the Cancer Commission

On January 17, 1952, a subcommittee of the Commission (chairman, Dr. Ian Macdonald) addressed a formal request to Dr. E. F. Boyd to review his work with arginase in the treatment of patients with cancer. This request resulted in the meeting above referred to.

Since that time the Commission has attempted to maintain a follow-up of the cases, with little cooperation from the proponents. Of the original 20 patients discussed at the Hollywood Hospital meeting, three were already dead of cancer at the time of the meeting; three are known to have subsequently died of cancer (cases 4, 9, and 16). Two, apparently well (cases 8 and 13), had surgical removal of the lesion. One had no evidence of disease when arginase was given (case 17). In the remainder there was no objective evidence of improvement.

Members of the Commission have reviewed the following cases or case histories:

(21) Male, child with "sarcoma of the pleura." Treated by Dr. Boyd in Los Angeles in 1952 and x-ray films interpreted as showing calcification of the tumor after three weeks' treatment. Died, within some weeks' time with disease uncontrolled.

(22) Female, with carcinoma of the breast treated by Dr. Ream in Alameda County. Died with extensive metastasis (autopsy).

(23) Male with carcinoma of the rectum. Treated by Dr. Ream. Died with extensive persistent tumor (limited autopsy).

(24) Male, said to have adenocarcinoma of the scalp, metastatic from the intestinal tract. Treated with arginase and lesion "arrested." Subsequent abdominal laparotomy for bleeding peptic ulcer. No carcinoma of bowel found. No verified primary tumor.

(25) Male with operable carcinoma of rectum seen in consultation by Dr. Phillips Johnson. Treated with arginase; tumor became larger. Patient finally agreed to exploration and resection. At time of operation metastases were found in liver.

(26) Female, with carcinoma of rectum, seen by Dr. Robert Scarborough in consultation. Patient had been given arginase by her family physician in 1950 and 1951 and had been told the tumor was "shrunk to fibrous lumps." Upon exploration in October 1951, very extensive inoperable carcinoma was found. The patient died in May 1952 after considerable distress. The sections were reviewed by Dr. David Wood, pathologist, and reported as typical of adenocarcinoma without any evidence of specific arginase effect.

The files of the Hollywood Presbyterian Hospital disclose that 120 patients had received treatment with arginase during 1951-52. The names of these patients were checked against the death records of the State Department of Public Health in May 1953. In 70 cases, cancer was listed as the cause of death. This does not include all the cases dead of cancer, since some had out of state residences and returned thereto prior to decease.

8. Autopsy Data Reviewed by Commission

The autopsy data on the cases above referred to show, in the opinion of experienced pathologists, no evidence of specific effect of arginase on cancer. Microscopic sections available on the ten patients reviewed by the Hollywood Presbyterian Hospital Committee have been studied by Drs. Fred Stewart and Frank Foote of the Memorial Center in New York, by a pathologist on the staff of the University of Rochester Medical School, and by Dr. Harry Goldblatt, director, Institute for Medical Research, Cedars of Lebanon Hospital. None of them was able to report any specific or unusual microscopic findings indicative of specific change in the neoplasms from the treatment given.

9. Consultant and Other Reports

The Cutter Laboratories of Berkeley assigned a full-time research worker to observe the arginase work at the Hollywood Hospital in February 1952. On April 3, 1952, Mr. F. A. Cutter wrote to the Cancer Commission, ". . . we found insufficient objective evidence of therapeutic value to cause us to divert our current research from other channels. We therefore terminated what has amounted to an option on a license agreement."

In the 1952 annual report of Cutter Laboratories to stockholders this was referred to as follows:

"Some of the company's stockholders have asked what made Cutter's stock go up so fast early in the year and what made it fall the same way later in the year.

"An unfortunate rumor got started that we were on the verge of coming out with a cancer cure. Like most rumors, there was a grain—but only a grain—of truth in it.

"We were investigating a so-called cancer cure which turned out disappointingly, as have dozens of other similar products we have investigated in the past. When this became known, quite a few sold stock and toward the end of the year, when the stock was down, there was further selling, presumably to establish capital losses."

The Cancer Committee of the Hollywood Presbyterian Hospital after reviewing the cases treated by Dr. Boyd, recommended in March 1952 that no further patients be treated with arginase; this was approved by the medical advisory board of the hospital and accepted by its administration. The latter decided that, until the original animal experiments could be confirmed by competent authorities, no further patients were to be treated.

The cases presented and the case histories discussed by Dr. Boyd at the February 1952 meeting of the Hollywood Presbyterian Hospital Cancer Committee were reported to and reviewed by the Cancer Commission of the California Medical Association at its regular meeting in Los Angeles, April 26, 1952. Dr. Robert Scarborough, then chairman of the Commission, was authorized to state that: "*All available evidence to us indicates that arginase has no beneficial effects in the control of cancer in experimental animals or in patients. To date, it must be concluded that arginase is valueless.*" This statement was released to the press, and was published in California newspapers in April 1952.

10. *Conclusions of the Commission*

Arginase (also termed hepasyn) has been advocated for the treatment of cancer. The current proponents have claimed "near miraculous results."

The Cancer Commision has collected information on more than 26 patients treated with arginase, at least six of whom are now dead with the disease. Of those alive, no patient has been found with objective evidence of control of cancer under treatment with arginase or hepasyn alone.

The hospital in which the treatments were given in 1951 and 1952 lists 120 patients as having received arginase; by May of 1953, 70 of these patients were known to be dead with cancer.

Autopsy studies disclosed no evidence of specific chemotherapeutic effect.

There is no evidence to date that arginase (or hepasyn) has a beneficial effect on patients with cancer.

REFERENCES

1. Vrat, Ved: Symposium on arginase in cancer research, Permanente Foundation Med. Bull., 9:49-70, 1951.

2. Irons, W. G., and Boyd, E. F.: Arginase as an anticarcinogenic agent in mice and human beings, Arizona Med., 9:39-44, 1952.

Council Meeting Minutes

Tentative Draft: Minutes of the 401st Meeting of the Council, San Francisco, July 25, 1953.

The meeting was called to order by Chairman Shipman in the Golden Empire Room of the Hotel Mark Hopkins, San Francisco, at 9:30 a.m., Saturday, July 25, 1953.

Roll Call:

Present were President Green, President-Elect Morrison, Speaker Charnock, Secretary Daniels and Councilors West, Wheeler, Loos, Sampson, Pearman, Dau, Ray, Shipman, Lum, Bostick, Teall, Varden, Heron, Frees, Carey, Kirchner and Reynolds; absent for cause, Vice-Speaker Bailey and Editor Wilbur. A quorum present and acting.

Present by invitation during all or a part of the meeting were Messrs. Hunton, Thomas, Clancy, Gillette and Pettis of C.M.A. staff, legal counsel Hassard, Mr. Ben Read of the Public Health League of California, county society executive secretaries Watson of Sacramento, Wood of San Mateo, Donovan of Santa Clara, Jensen of Fresno, Geisert of Kern, Nute of San Diego and Bannister of Orange; Mr. K. L. Hamman of California Physicians' Service; and Drs. D. H. Murray, Wilton L. Halverson, John R. Upton, Francis J. Cox, Dan O. Kilroy, Christopher Leggo, John M. Kenney and James Doyle.

1. *Minutes for Approval:*

(a) On motion duly made and seconded, minutes of the 399th Council meeting, held May 23-27, 1953, were approved.

(b) On motion duly made and seconded, minutes of the 400th Council meeting, held May 28, 1953, were approved.

2. *Membership:*

(a) A report of membership as of July 18, 1953, was received and ordered filed.

(b) On motion duly made and seconded, one 1952 delinquent member and 57 members delinquent in 1953 were voted reinstatement.

(c) On motion duly made and seconded in each instance, eight applicants were voted Associate Membership. These were: Gordon Diddy, Fred C. Tongue, Glenn A. Young, Fresno County; Jeanne B. Blumhagen, Rex V. Blumhagen, Madera County; Merall Roth, Bernard M. Stone, San Francisco County; Helen M. Safford, San Joaquin County.

(d) On motion duly made and seconded in each instance, four applicants were voted Retired Membership. These were: Alfred M. Palmer, William Henry Sargent, Alameda-Contra Costa County; Philip Stephens, Los Angeles County; Lloyd D. Mottram, Stanislaus County.

(e) On motion duly made and seconded in each instance, a reduction of dues was granted to nine applicants who are suffering from protracted illness or undergoing postgraduate studies.

3. *Financial:*

(a) A report of bank balances as of July 18, 1953, was received and ordered filed.

(b) Mr. Hunton reported on his correspondence with New Mexico Physicians' Service and this was ordered filed.

4. *House of Delegates Actions:*

The Council reviewed two resolutions referred to it by action of the 1953 House of Delegates.

On Resolution No. 6, it was duly moved, seconded and voted to publish a map of California outlining the service areas of physicians in all parts of the state, to advise Dr. Burt Davis, author of the resolution, to this effect and inquire if such a map meets his request for a survey of medical service areas, to seek publicity on the Association's placement activities and to urge the Committee on Rural Health to continue its cooperation in the placement of physicians in areas of need.

On motion duly made and seconded, it was voted to request the C.M.A. Delegates to the A.M.A. to introduce resolutions in the A.M.A. looking toward a study of areas in need of additional medical service in all states.

On Resolution No. 7, introduced by Dr. Burt Davis, it was duly moved, seconded and voted to table.

5. *Medical Services Commission:*

Dr. Teall reported that the Medical Services Commission was considering its role in handling the recommendations of the C.P.S. Study Committee report, now referred to the commission. It was generally agreed that the commission was to serve as a source of information for the county societies, using all means at its command.

The matter of communication of news was also discussed and it was regularly moved, seconded and voted to expand the publication *Rx Reading* to include current items on health insurance and other factual material.

Dr. Teall also gave an illuminating report on his attendance at the meeting of the Cooperative Health Federation of America.

6. *Blood Bank Commission:*

Dr. Upton reported that four of the blood bank system banks had not secured a renewal of their contracts for production of blood for defense. He stated the commission was working with the Hemophilia Foundation of America for the supply of antihemophilia blood.

Dr. Upton suggested that legislation be secured to provide property tax exemption for premises used for non-profit blood banking purposes.

The blood banks in the system have produced 495,541 units of blood for defense and 54,647 units for civilian purposes since the current defense program started.

7. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox gave a progress report and expressed the hope that a more adequate schedule of industrial fees may be achieved in the very near future.

8. *Group Disability Insurance:*

Dr. Kirchner discussed the proposed program of disability insurance for Association members. Letters of approval or disapproval of the program from the insurance committees of several county societies were read and discussed.

On motion duly made and seconded, it was voted to approve the group disability insurance program proposed by the Lumbermans Mutual Insurance Co., through its broker, Charles O. Finley Co., for presentation to members of the California Medical Association.

9. *Committee on Industrial Health:*

Dr. Christopher Leggo, chairman of the Committee on Industrial Health, presented a revised statement of principles on nurses in industrial plants, previously approved by the Council and subjected to slight editing by the California State Nurses Association. Subject to Council approval, this statement could be issued jointly by the two associations. On motion duly made and seconded, the revised statement was approved.

Dr. Leggo also called attention to the fact that some physicians are declining from 25 to 43 per cent of job applicants where there is a history of back pain and the new employer may be held liable for its aggravation. He suggested this condition be watched over in coming months as a possible source of economic reaction due to the unemployability of the rejected applicants.

10. *Public Relations:*

Mr. Clancy reviewed the television program inaugurated July 12, 1953, as a public service program under the sponsorship of the Los Angeles County Medical Association and the California Medical Association. With minor changes this program could be made into a C.M.A. program suitable for telecasting in any area of the state.

A film reproduction of the initial telecast was shown.

11. *State Department of Public Health:*

Dr. Wilton L. Halverson, State Director of Public Health, reported an anticipated increase of polio-

myelitis cases in 1953 over the 1952 total of about 4,000. However, the incidence of paralysis is running about 46 per cent this year, compared with about 64 per cent in 1952. He discussed the use of gamma globulin for both mass inoculations and treatment of family contacts of clinically diagnosed polio cases, stating the greater chance of immunization lay in the family contact groups.

On motion duly made and seconded, the Committee on Public Health and Public Agencies was authorized to cooperate with Department of Public Health in the event of mass inoculations and to seek further cooperation from the county societies.

Dr. Halverson reported the incidence of encephalitis appeared low this year.

12. *Health Education:*

Dr. John M. Kenney, Santa Rosa, discussed the need of cooperating with the schools and other agencies in fostering adequate and accurate education on health subjects. The subject was taken under advisement.

13. *Legal Department:*

Mr. Hassard gave a progress report on the San Diego lawsuit, on which final briefs have been filed and oral arguments made before the appeals court.

14. *California Physicians' Service:*

Dr. Heron reported 605,274 beneficiary members and 11,157 physician members of California Physicians' Service as of June 30, 1953. The beneficiary membership showed a gain of 29,330 for the second calendar quarter. He also reported progress in the joint meetings between C.P.S. and Blue Cross representatives and stated that one basic contract has been developed to replace seven types of contracts previously used. Additional benefits may be added to the basic contract in specific instances. Mr. K. L. Hamman presented a financial report.

15. *Public Policy and Legislation:*

Dr. Dwight H. Murray and Mr. Ben H. Read gave a report on legislation adopted by the state's 1953 legislature and now pending before Congress. It was pointed out that all measures sponsored by the C.M.A. in the 1953 state legislative session had been adopted and signed into law.

16. *Advisory Planning Committee:*

Mr. Hunton reported the Advisory Planning Committee had met July 24, had approved the kinescoping of the Los Angeles television program for use in other areas and had approved the issuance of a new "Welcome" pamphlet to be sent to new members of the Association.

Proposed Constitutional Amendment

(First Publication)

Following is the proposed amendment to the Constitution of the California Medical Association that was introduced at the 1953 Annual Session and was carried over for action at the Interim Session. It has been referred to Reference Committee No. 4, which is to make its report upon it available to delegates at least 30 days before the opening of the 1953 Interim Session in San Francisco, December 12, 1953. California Medical Association members who wish to record opinions on the proposed amendment may send them to the chairman of Reference Committee No. 4, Albert G. Miller, M.D., 77 San Mateo Drive, San Mateo.

Submitted by Sidney J. Shipman, for the Council, May 24, 1953.

Resolved: That Article III, Part A, Section 1 of the Constitution of this Association, the California Medical Association, be amended by striking out the word "District" in subsection (c) of said Section 1, so that Section 1 will read as follows:

Section 1—Composition

"The House of Delegates shall consist of:

"(a) Delegates elected by the members of the component societies;

"(b) Officers of the Association as hereinafter provided;

"(c) Ex-officio, with the right to vote, the Councilors, and

"(d) Ex-officio, without the right to vote, the Past Presidents."

17. *Committee on the Unlawful Practice of Medicine:*

Dr. Shipman made a progress report on the activities of the Committee on the Unlawful Practice of Medicine.

18. *San Diego Television Program:*

On motion duly made and seconded, it was voted to provide consultation service to the San Diego County Medical Society in the production of a television program to originate there.

19. *Orange County Medical Association:*

On motion duly made and seconded, it was voted to extend to the Orange County Medical Association the sincere thanks of the Association for having performed an outstanding job in rechecking the physical status of 50,000 Boy Scouts prior to their admission to the Jamboree held in Orange County. It was pointed out that 201 Orange County members had signed up to do the rechecking and all but one or two appeared as scheduled.

20. *Use of C.M.A. Mailing List:*

On motion duly made and seconded, it was voted to approve the use of the Association's mailing list by the San Francisco Heart Association in publicizing a scientific meeting.

21. *World Medical Association:*

On motion duly made and seconded, it was voted to appropriate $1,000 toward the activities of the World Medical Association. A three-fourths vote noted.

22. *Committee on Rural Health:*

On motion duly made and seconded, it was voted to approve the plan of Dr. Henry Randel, chairman of the Committee on Rural Health, to seek the names of additional committee members for appointment by the Council.

23. *Vocational Nursing:*

Dr. Morrison reported on a meeting with an organization of vocational nurses and it was agreed he should maintain this contact.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 6:25 p.m.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

Nursing Services in Industry

A statement of principle made jointly by the California Medical Association and the California State Nurses Association

THE CALIFORNIA MEDICAL ASSOCIATION and the California State Nurses Association have reviewed the contribution to industrial health made by the members of the nursing profession through the individual activities of the nurses employed by and in industry. Through their contact with individual employees and with members of management, nurses have furthered public health education, the use of community resources, improved personal and plant hygiene, healthier psychological relationships between management and workers, and a closer liaison between the plant employee and the practicing physician.

It is also recognized, however, that demands are made by both employees and management upon nurses in industry to engage in activities which appear to encroach upon the practice of medicine as defined by the California Medical Practice Act. If the nurse accedes to these demands, she is jeopardizing her professional status and her very livelihood.

It is urged that the nurse in industry, having met a particular emergency with which she is confronted, protect herself, her patient and her employer by referring the patient to a physician for diagnosis or medical care when either is required, and that further treatment be carried on only under such medical supervision. Employers of nurses are urged to facilitate and encourage such referrals, in order that they themselves may be protected against being involved in violations of the Medical Practice Act.

Technicalities of the Medical Practice Act are difficult to translate into lay language and no simple definition can be given as to what services may be rendered with impunity. It certainly may be said, however, that any injury serious enough to cause even temporary disability or which requires more than protective dressing, or which does not respond favorably to procedures which are commonly considered to be emergency nursing procedures requires medical treatment.

It must be borne in mind that, regardless of the wishes of the patient or his personal needs, or the demands of the employer in regard to industrial injuries, a nurse is forbidden by law to either diagnose or treat medical conditions or surgical injuries. Only as this fact is fully understood by employees and employers alike will the pressure upon the nurse to exceed her functions be lessened.

It is essential that every nurse and her industrial employer be thoroughly conversant with the Medical Practice Act and its implications. It must be remembered that the law cannot be ignored. A violation remains a violation whether committed ignorantly or knowingly.

The California Medical Association and the California State Nurses Association anticipate and welcome the further extension of employment of nurses in industry in view of their contributions both to the overall health and to the physical and emotional welfare of employed individuals. Both organizations look forward to establishing and maintaining the area in which the professional industrial nurse may function effectively, efficiently, ethically and legally.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 9-13, 1954

Papers for Presentation

If you have a paper that you would like to have considered for presentation, **it should be submitted to the appropriate section secretary** (see list on this page) not later than November 15, 1953.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1953. (No exhibit shown in 1953, and no individual who had an exhibit at the 1953 session, will be eligible until 1955.)

SCIENTIFIC PAPERS . . .

. . . SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy *Lazarre J. Courtright*
490 Post Street, San Francisco 2

Anesthesiology *Marshall L. Skaggs*
18 Hillcrest Road, Mill Valley

Dermatology and Syphilology . . *Walter F. Schwartz*
696 East Colorado Street, Pasadena 1

Eye, Ear, Nose and Throat—

Eye *Alfred R. Robbins (Chairman)*
1930 Wilshire Boulevard, Los Angeles 57

ENT *Francis A. Sooy*
490 Post Street, San Francisco 2

General Medicine *Edgar Wayburn*
490 Post Street, San Francisco 2

General Practice *Joseph W. Telford*
3255 Fourth Avenue, San Diego 3

General Surgery *William Brock*
2633 Pacific Avenue, Stockton 4

Industrial Medicine and Surgery *Verne G. Ghormley (Asst. Secty.)*
2014 Tulare Street, Fresno

Obstetrics and Gynecology . . . *Charles T. Hayden*
411 Thirtieth Street, Oakland 9

Pathology and Bacteriology *Paul Michael*
450 Thirtieth Street, Oakland 9

Pediatrics *Gordon F. Williams*
1111 University Drive, Menlo Park

Psychiatry and Neurology . . . *George N. Thompson*
2010 Wilshire Boulevard, Los Angeles 57

Public Health *L. S. Goerke*
116 Temple Street, Los Angeles 12

Radiology *H. R. Morris*
1027 "D" Street, San Bernardino

Urology *Thomas I. Buckley*
431 Thirtieth Street, Oakland 9

In Memoriam

Abrons, Harry. Died in New York City, June 4, 1953, aged 70, of angina pectoris. Graduate of Columbia University College of Physicians and Surgeons, New York, 1909. Licensed in California in 1910. Doctor Abrons was a retired member of the Alameda-Contra Costa County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

Avery, John W. Died recently, aged 85. Graduate of the University of Vermont College of Medicine, Burlington, 1897. Licensed in California in 1923. Doctor Avery was a retired member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

Black, Emil C. Died in San Diego, July 2, 1953, aged 78. Graduate of the University of Nebraska College of Medicine, Omaha, 1903. Licensed in California in 1914. Doctor Black was a retired member of the San Diego County Medical Society, the California Medical Association, and an associate member of the American Medical Association.

✤

Burke, Donald W. Died in Salinas, July 8, 1953, aged 57. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1924. Licensed in California in 1924. Doctor Burke was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and the American Medical Association.

✤

Brooks, LeRoy. Died in the Bohemian Grove encampment on the Russian River, August 1, 1953, aged 60, of coronary artery disease. Graduate of Marquette University School of Medicine, Milwaukee, Wis., 1920. Licensed in California in 1921. Doctor Brooks was a member of the San Francisco Medical Society, the California Medical Association, and the American Medical Association.

✤

Eikenberry, Kenneth W. Died in Hollywood, July 15, 1953, aged 47. Graduate of the University of California Medical School, Berkeley-San Francisco, 1932. Licensed in California in 1937. Doctor Eikenberry was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

Haig, Thomas R. Died in San Francisco, July 13, 1953, aged 57, of coronary artery disease. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1922. Licensed in California in 1922. Doctor Haig was a member of the Sacramento Society for Medical Improvement, the California Medical Association, and the American Medical Association.

✤

Hershberger, Lloyd R. Died in Los Angeles, June 14, 1953, aged 47. Graduate of Northwestern University Medical School, Chicago, Ill., 1931. Licensed in California in 1931. Doctor Hershberger was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

✤

Ingalls, Albert T. Died May 1, 1953, aged 79. Graduate of the Indiana Medical College School of Medicine of Purdue University, Indianapolis, 1906. Licensed in California in 1919. Doctor Ingalls was a member of the Los Angeles County Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

Sargent, William H. Died in Oakland, July 29, 1953, aged 71, of coronary thrombosis. Graduate of Bennett Medical College, Chicago, Ill., 1905. Licensed in California in 1920. Doctor Sargent was a member of the Alameda-Contra Costa Medical Association, the California Medical Association, and an associate member of the American Medical Association.

✤

Stewart, John N. Died in Santa Maria, July 18, 1953, aged 44, of adenocarcinoma of the pancreas. Graduate of the University of Nebraska College of Medicine, Omaha, 1932. Licensed in California in 1940. Doctor Stewart was a member of the Santa Barbara County Medical Society, the California Medical Association, and the American Medical Association.

✤

Whalen, John A. Died in Los Angeles, March 27, 1953, aged 60, of bronchogenic carcinoma. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1924. Licensed in California in 1925. Doctor Whalen was a member of the Los Angeles County Medical Association, the California Medical Association, and the American Medical Association.

NEWS & NOTES

NATIONAL · STATE · COUNTY

LOS ANGELES

Doctors of medicine, discussing health topics of general interest to the public, have been appearing on television in the Los Angeles area each week since July 12, 1953, under the auspices of the California Medical Association and the Los Angeles County Medical Association. The program, titled **"Ask the Doctor,"** is presented as a public service feature by Station KTLA for a half hour beginning at noon every Sunday. Production, under the supervision of the CMA, is being managed by Bill Tobitt, former Orange County Medical Association executive secretary. Program content and participating doctors are determined by the radio and television committee of the LACMA.

Subjects presented during the first seven weeks dealt with sunburn, obesity, children's accident prevention, rheumatic fever and mitral stenosis, crossed eyes, poliomyelitis and tuberculosis. The number of physicians has varied from two to four for each program, with Gil Martyn, station feature events chief, serving as coordinator of their discussions.

The title has a direct implication in that viewers are invited to telephone their questions while a program is in progress, in addition to writing in questions on a topic announced for the succeeding week. There has been an excellent and complimentary response of mail thus far.

* * *

Guest speakers at the Annual Symposium of Cardiac Disease to be presented by the **Los Angeles County Heart Association** at the Wilshire Ebell Theatre, Los Angeles, October 20-21, will be: George Burch, M.D., New Orleans, Tulane University School of Medicine; Lewis Dexter, M.D., Boston, Harvard Medical School; Harald Eliasch, M.D., Stockholm, St. Erik's Hospital; and Paul Wood, M.D., London, Institute of Cardiology. (Detailed program on page 262.)

SAN DIEGO

The California Academy of General Practice will hold its Fifth Annual Scientific Assembly at the Hotel del Coronado, Coronado, October 25, 26 and 27.

Twenty scientific papers will be presented on a variety of medical, obstetrical and surgical subjects. Among the many noted speakers are Louis Buie, M.D., senior consultant Department of Proctology, Mayo Clinic; Alfred C. Kinsey, Ph.D., professor of zoology, Indiana University; Raymond McNealy, M.D., professor of surgery, Cook County Postgraduate School of Medicine, Chicago; and F. H. Bentley, M.D., formerly professor of surgery, University of Durham, England, and now lecturer in surgery, Sommer Memorial Trust, Portland, Oregon.

More than 1000 physicians from California, Oregon, Nevada and Arizona are expected to attend. The meeting is open to all members of the Academy and to any non-member doctor of medicine upon payment of a $5 registration fee. Further information may be had from the California Academy of General Practice, Suite 900, 461 Market Street, San Francisco 5.

SAN FRANCISCO

The 20th Annual Meeting of the **American College of Chest Physicians** will be held in San Francisco, June 17-20, 1954. Californians currently holding office in the organization are Dr. Seymour M. Farber, San Francisco, who was reelected regent-at-large of the College at the annual meeting in May; Dr. Buford H. Wardrip, San Jose, governor of the College for California; and Dr. E. W. Hayes, Monrovia, who was reelected chairman of the Council on Undergraduate Medical Education.

* * *

The San Francisco Heart Association will hold its 24th annual postgraduate **symposium on heart disease** October 28-30, 1953, at the St. Francis Hotel, San Francisco, in cooperation with the Heart Associations of Alameda, Contra Costa, Monterey, San Mateo and Santa Clara counties.

Guest speakers will be Robert H. Bayley, M.D., Oklahoma City; Herrman Blumgart, M.D., Boston; Howard B. Burchell, M.D., Rochester, Minn.; Robert L. King, M.D., Seattle; Ann G. Kuttner, M.D., New York City; Howard B. Sprague, M.D., Boston; Eugene A. Stead, Jr., M.D., Durham, N. C.; Lewis Thomas, M.D., Minneapolis; Francis C. Wood, Philadelphia, and Paul Wood, M.D., London. (Detailed program on page 262.)

GENERAL

Books for Israel is making a plea to physicians who have medical books (published since 1940) that they no longer use, to send them parcel post prepaid, to Books for Israel, 115 King Street, New York 1, N. Y., for transshipment to Israel where they are badly needed.

It was pointed out that up to 70 pounds may be sent by parcel post at eight cents for the first pound and four cents for each additional pound, marked "Book Rate." Request was made that the return address of the individual or organization sending books be given so that the gift may be acknowledged. Funds for shipment from New York to Israel have been provided under Point IV, U. S. State Department, sponsors of this project, it was said.

* * *

Information on the latest developments aimed at preventing disease and promoting personal and public health will be exchanged by professional workers from all parts of the free world at the 81st annual meeting of the **American Public Health Association** and annual sessions of 40 related organizations at the Hotels Statler and New Yorker, New York City, November 9-13.

More than 5,000 public health workers—physicians, dentists, nurses, engineers, statisticians, veterinarians, sanitarians, nutritionists, health educators, entomologists, biologists and others—are expected to attend the sessions, according to the association's executive secretary, Dr. Reginald M. Atwater.

* * *

The American Goiter Association has announced the opening of the annual contest for the **Van Meter Prize Award** of $300 and two honorable mentions for the best essays submitted concerning original work on problems related to the thyroid gland. The award will be made at the annual meeting of the association which will be held in Boston, Massachusetts, April 29, 30 and May 1, 1954, providing essays of sufficient merit are presented in competition.

The competing essays may cover either clinical or research investigations; should not exceed three thousand words in length; must be presented in English, and a typewritten double-spaced copy in duplicate sent to the corre-

sponding secretary, Dr. John C. McClintock, 149½ Washington Avenue, Albany 10, New York, not later than January 15, 1954.

* * *

Ten special **grants** totalling $71,070 to aid research projects in California were announced recently by the California Division of the **American Cancer Society.** They were:

$25,255 to the University of California at Berkeley, $16,451 of that amount to be used for tumor host studies and $8,804 to be used in support of a follow-up study of cancer patients in the departments of the University School of Medicine.

$21,150 to the Los Angeles County General Hospital for continuation of cancer research projects already under way, and for completion of an analysis of the hospital's chest tumor registry which may help determine whether or not the mass x-ray survey technique is effective in detection of cancer of the lung.

$10,000 to Stanford University. Of that amount, $5,000 is for continuation of studies on the role of the pituitary and adrenals in cancer development and $5,000 for studies on the characterization and function of important biochemical fractions.

$7,065 to the University of San Francisco in support of research on the structure of chromosomes by Dr. William Hovanitz, professor of biology.

$5,000 for tissue culture studies of carcinoma of the uterine cervix at the University of California at Los Angeles.

$2,000 to the Rees-Stealy Clinic Research Foundation in San Diego for study of the *in vivo* metabolism of radioactive estrogens.

$600 to the University of Southern California for emergency support of a study of the capacitance of bladder mucosa.

POSTGRADUATE EDUCATION NOTICES

LOS ANGELES HEART ASSOCIATION

October 20-21, Wilshire Ebell Theatre, Los Angeles

Symposium on Cardiac Disease

TUESDAY, OCTOBER 20, 1953

MORNING

9:30—Opening remarks by Edgar F. Mauer, M.D., President of the Los Angeles County Heart Association.

9:45—Four Year Follow-up of Rheumatic Fever Patients Treated with ACTH and Cortisone, George Griffith, M.D.

10:05—Unappreciated Physical Signs Important in Cardiovascular Diagnosis—Paul Wood, M.D.

10:35—Use of the Dye Dilution Technique for Determination of Cardiac Output in Pre- and Postoperative Valvular Heart Disease—Albert A. Kattus, M.D., Gilbert F. Sofio, M.D., Aaron A. Cohen, M.D., and Arthur U. Rivin, M.D.

10:55—Some Aspects of the Mechanism of Congestive Heart Failure—George Burch, M.D.

11:25—Curable Heart Disease—Lewis Dexter, M.D.

AFTERNOON

Symposium on the Surgical Relief of Mitral Stenosis

1:30—Mitral Insufficiency: Its Diagnosis and Its Effect on Valvulotomy for Mitral Stenosis—Lewis Dexter, M.D.

2:00—The Effects of Mitral Valvular Disease on Renal Hydrodynamics—Harald Eliasch, M.D.

3:30—Roundtable Presentation and Discussion: Valvulotomy for Mitral Stenosis—Selection of patients, role of cardiac catheterization, pre- and postoperative care and results—George Burch, M.D., Lewis Dexter, M.D., Harald Eliasch, M.D., George Griffith, M.D. Paul Wood, M.D., and William Paul Thompson, M.D., moderator.

WEDNESDAY, OCTOBER 21

MORNING

9:30—The Recognition of Giant Dilatation of the Left Auricle—R. C. Pollock, M.D.

9:45—The Comparison of Humoral and Neurogenic Factors in Human Hypertension by Bioassay with Hexamethonium—Daniel Green, M.D.

10:05—Experiences in the Surgical Relief of Aortic Stenosis—William H. Muller, Jr., M.D., Albert A. Kattus, Jr., M.D., and J. Francis Dammann, Jr., M.D.

10:55—Intramural Depolarization Potentials in Myocardial Infarction—Myron Prinzmetal, M.D., Rexford Kennamer, M.D., Clinton Shaw, M.D., Noboru Kimura, M.D., Inga Lindgren, M.D., Morton Maxwell, M.D., Jacob L. Bernstein, M.D., and Alfred Goldman, M.D.

AFTERNOON

1:30—Cor Pulmonale and Hypoxia—Lewis Dexter, M.D.

2:30—The Continental Viewpoint on Pulmonary Hypertension—Paul Wood, M.D.

3:00—Three-Year Study of Atherosclerosis and Arteriosclerosis by the Chylomicron Index—George Griffith, M.D.

3:15—The Protective Value of Pulmonary Valvular Stenosis in Certain Forms of Congenital Heart Disease—Louis E. Martin, M.D., Sidney S. Sobin, M.D., Harvey A. Humphrey, M.D., John L. Johnson, M.D., and Eugene Temkin, M.D.

3:30—Experimental Production of Congenital Cardiac Lesions in the Rat—Sidney S. Sobin, M.D., Marjory H. Fox, and Betty Davis.

3:50—The Low Salt Syndrome: Its Recognition and Treatment—George Burch, M.D.

SAN FRANCISCO HEART ASSOCIATION

October 28-30, St. Francis Hotel, San Francisco

24th Annual Symposium on Heart Disease

WEDNESDAY, OCTOBER 28

MORNING

9-12—Session on Electrocardiography and Other Graphic Diagnostic Methods—David A. Rytand, M.D., presiding.

9-10:30—Electrocardiographic Pathological Conference—Moderator: David A. Rytand, M.D.; participants: Robert H. Bayley, M.D., Howard B. Burchell, M.D., Howard B. Sprague, M.D., Francis C. Wood, M.D., and Paul Wood, M.D.

10:45-11:20—Considerations of the Foundation of Vectorcardiography—Robert H. Bayley, M.D.

11:20-11:55—The Clinical Value of Phonocardiography—Howard B. Sprague, M.D.

AFTERNOON

Presiding: Edward Campion, M.D., President, Northern California Pediatric Society

1:30-2:30—Therapy of Rheumatic Diseases—A panel discussion. Moderator: Lowell A. Rantz, M.D.; participants: Ann G. Kuttner, M.D., Lewis Thomas, M.D., and Paul Wood, M.D.

2:30-3:00—Appreciation of Physical Signs—Paul Wood, M.D.

3:15-4:00—New Techniques in the Diagnosis of Congenital Heart Disease with Particular Regard to Dye Dilution Curves—Howard B. Burchell, M.D.

4:00-5:00—Cardiac Involvement in Non-Cardiac Pediatric Conditions—A panel discussion. Moderator: Henry Brainerd, M.D.; participants: Howard B. Burchell, M.D., Mary B. Olney, M.D., Ann G. Kuttner, M.D., and Lewis Thomas, M.D.

THURSDAY, OCTOBER 29

MORNING

Presiding: Alfred Goggio, M.D.
Past President, Alameda County Heart Association

9:00-10:00—Present Status of Modern Cardiac Surgery—a panel discussion. Moderator: Alfred Goggio, M.D.; participants: Howard B. Burchell, M.D., Frank Gerbode, M.D., H. Brodie Stephens, M.D., and Paul Wood, M.D.

10:00-10:45—Unusual Forms of Heart Disease—Howard B. Burchell, M.D.

11:00-12:00—Mitral Valve Disease—Paul Wood, M.D.

AFTERNOON

Presiding: Robert L. Smith, Jr., M.D.

1:30-2:30—The Pathology and Clinical Classification of Cardiac Pain—Herrman Blumgart, M.D.

2:30-3:30—Controversial Issues in the Management of Myocardial Infarction—Howard B. Burchell, M.D.

3:45-5:00—Panel Discussion on Chronic Coronary Disease. Moderator: Robert L. Smith, Jr., M.D.; participants: Herrman Blumgart, M.D., Robert L. King, M.D., Eugene A. Stead, Jr., M.D., and Howard B. Sprague, M.D.

FRIDAY, OCTOBER 30

MORNING

Presiding: Maurice Eliaser, Jr., M.D., President, San Francisco Heart Association

9:00-9:15—President's Address: Maurice Eliaser, Jr., M.D.

9:15-9:30—Greetings from the President of the American Heart Association—Robert L. King, M.D.

9:30-10:30—The Treatment of Cardiac Emergencies—Herrman Blumgart, M.D.

10:45-11:15—Present Views in Circulatory Failure—Eugene A. Stead, Jr., M.D.

11:15-12:15—Cardiac Drugs—a panel discussion. Moderator: Maurice Eliaser, Jr., M.D.; participants: Herrman Blumgart, M.D., Robert L. King, M.D., Howard B. Sprague, M.D., Eugene A. Stead, Jr., M.D., and Paul Wood, M.D.

AFTERNOON

1:30-5:00—Clinical Session, Nurses' Auditorium, Mount Zion Hospital. Presiding: Arthur L. Bloomfield, M.D.; participants: Herrman Blumgart, M.D., Howard B. Burchell, M.D., Robert L. King, M.D., Howard B. Sprague, M.D., Eugene A. Stead, Jr., M.D., Francis C. Wood, M.D., and Paul Wood, M.D.
It is planned to illustrate the following subjects: Hypertension, Bacterial Endocarditis, Mitral Valve Disease, Myocarditis, Pulmonary Hypertension, and others.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Cardiology and Vascular Disease—No. 832

Date: September 14, 1953—full time, one year.

Fee: $1,000.00.

History, physiology, pathology, diagnosis, treatment of cardiac and peripheral disease. Emphasis placed on bedside teaching, electrocardiography, fluoroscopy, and associated diagnosis aids. Designed to meet the requirements for certification by the American Board of Cardiology. Six hours of didactic lectures per week; 35 hours of laboratory work. 32 units credit for master's degree. Course Director: George C. Griffith, M.D.

Gastroenterology—No. 844

Date: September 21, 1953—Full time, one year.

Fee: $1,000.00.

Course is designed to give a limited number of qualified physicians advanced training in this field. The didactic courses will include intensive study of the physiology, pathology, as well as the clinical aspects of the diseases of the digestive tract. Clinical teaching will be done in the outpatient department of the Los Angeles County Hospital. 32 units credit for master's degree. Course Director: George K. Wharton, M.D.

Diagnostic and Therapeutic Radiology—No. 858

Date: Course begins by arrangement.

Fee: 3 mos.—$250.00 6 mos.—$ 500.00
9 mos.—$750.00 12 mos.—$1,000.00

This course is designed for a limited number of qualified physicians who wish to prepare for the American Board of Radiology, and who wish specialized training in a particular field of medicine such as orthopedics, cardiology, etc. Course will be conducted in the Department of Radiology at the Los Angeles County Hospital. Course Directors: Ray A. Carter, M.D., George Jacobson, M.D.

Anesthesia

Date: Course begins by arrangement.

Fee: $300.00 (full time, three months).

Basic principles and techniques involved in administering the various anesthetic agents, including oxygen therapy and operating room care of patients. Open to a limited number of qualified physicians and dentists. Emphasis placed on practical administration of anesthetic agents. Presented at the Los Angeles County Hospital. Course Director: J. S. Denson, M.D.

Contact: Gordon E. Goodhart, M.D., University of Southern California School of Medicine, Division of Medical Extension Education, 1200 North State Street, Box 158, Los Angeles 33, California.

COLLEGE OF MEDICAL EVANGELISTS

Full-Time Basic Science Course in Surgery and Surgical Specialties

Date: October 5, 1953 through June 11, 1954.

Fee to be announced.

Contact: H. M. Walton, M.D., Chairman, Postgraduate Division, 312 North Boyle Avenue, Los Angeles 33.

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

In Long Beach (in cooperation with the Long Beach Branch, Los Angeles County Medical Association)

Clinical Medical Seminars

Date: September 23, 1953-June 23, 1954, One Wednesday per month, 2-5 p.m.

Fee: $50.00.

In Los Angeles:

1. Annual Postgraduate Medical Seminars.

Date: September 21-December 7, weekly panel presentations.

Fee: $50.00.

2. Dermatology in General Practice (limited to 20 students).

Date: October 7-November 11.

Fee: $30.00.

3. Surgical Anatomy (limited to 30 students).

Date: November 5, 1953-January 27, 1954.

Fee: $75.00.

4. Photography in Medical Practice and Research.

Date: September 30-December 16.

Fee: $50.00.

5. Dermatology Conference.

Date: February 11, 12, 1954.

Fee: $35.00.

6. Anesthesiology.

Date: Spring, 1954.

Fee: Details to be announced.

7. Fundamental Principles of Radioactivity, including Clinical Use of Radioisotopes.

Date: September-June.

Fee: $700.00.

40 weeks—200 hours (including 80 hours clinical).

Contact: Mrs. Margaret H. Griffith, Assistant Head, Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Evening Lectures in Medicine, Mills Memorial Hospital, San Mateo.

Date: September 17-December 10.

Medicine for General Practitioners, East Oakland Hospital.

Date: September 22-December 8.

Ophthalmology, University Extension Building, 540 Powell Street, San Francisco.

Date: December 2, 3, 4, 5 (changed from September 7-12).

Contact: Office of Medical Extension, University of California School of Medicine, University of California Medical Center, San Francisco 22, California.

STOCKTON POSTGRADUATE STUDY CLUB

Fall Lecture Series, 1953

Sept. 17—Management of Coronary Artery Disease—George Griffith, M.D., University of Southern California, Los Angeles.

Sept. 24—Acute Intestinal Obstruction—Orville Grimes, M.D., University of California Hospital, San Francisco.

October 8—Problem of the Nervous Patient—Alfred Overbach, M.D., San Francisco.

October 15—Recent Advances in the Practical Use of Hormones—Peter Forsham, M.D., University of California Hospital, San Francisco.

October 22—Diagnostic and Therapeutic Errors in the Handling of Tumors from the Standpoint of a Pathologist—Warren Bostick, M.D., University of California Hospital, San Francisco.

October 28—Differential Diagnosis of Urological Signs and Symptoms—Donald Smith, M.D., University of California Hospital, San Francisco.

November 12—Diagnosis and Treatment of Common Skin Diseases—Eugene M. Farber, M.D., Stanford Hospital, San Francisco.

November 19—Treatment of Infertility, Sterility and Habitual Abortion—Abraham R. Abarbanel, M.D., College of Medical Evangelists, Los Angeles.

SEMINARS OF THE ALUMNI COMMITTEE OF THE CHILDREN'S HOSPITAL, SAN FRANCISCO

Oct. 31, 1953—Naevi, Tumors and Malignancies in Childhood—10:00-4:30.

December 5, 1953—Surgery and Anesthesia in Childhood, with a discussion on the effects of hospitalization on the young child for surgical procedures.

January 23, 1954—The Problems of Prematurity and the Newborn Infant.

March 30, 1954—Acute and Chronic Infections and the Choice of Antibiotics in Treatment.

April 24, 1954—Childhood Ecology, with a discussion of physical, mental and emotional growth and development of the young child; the effects of deprivation of maternal care, and the impact of environment on the child.

A fee of $15.00 will be charged for attendance at all the seminars and those who wish to have further details or be on the mailing list for such details may write to: H. E. Thelander, M.D., Children's Hospital, 3700 California Street, San Francisco.

INFORMATION

Union Labor Health and Welfare Insurance Plans

The Present Status In the San Francisco Bay Area

SAMUEL R. SHERMAN, M.D., San Francisco

THE HEALTH of trade union members has been a subject for union interest ever since 1893. It is true that extensive health insurance programs now being advocated are of comparatively recent development but only as far as they are considered issues related to collective bargaining. Provision for the financial protection of members against wage losses due to illness was among the earliest beneficial activities of trade unions. Barbers, who were organized in 1887, offered sick benefits to their membership in 1893. Tobacco workers and pattern makers provided such benefits as early as 1896. However, the whole history of union sickness benefits has been a troubled one. Many of the plans were begun on an inadequate financial basis. The following is a quotation from a bulletin recently released by the American Federation of Labor regarding the early health benefit plans: "Unions have sponsored their own benefit plans for decades. Often actuarially unsound, and over-ambitious in scope, many of these plans collapsed." In 1933 twenty unions reported payments of sickness benefits. In 1943 there were still only eighteen such reports.

What, then, brought about the renewed interest in health and welfare programs, and when did they start their swing into the labor limelight?

The inclusion of health and welfare programs in labor contracts is a wartime development. During the period of the wage stabilization program efforts were made to secure "fringe benefits" in lieu of proposed wage increases. The War Labor Board acted kindly toward proposals for sickness pay and approved complete health protection programs, if the employer was agreeable. More often than not he was. This stimulated growth of the plans.

There are many problems which must still be faced in the development of union health and welfare programs. There are many kinds of program in effect and many new kinds which are being advocated. A single ideal program cannot be evolved to meet equally the needs of different employee groups. Insurance advisors have warned the unions that the plans must have a sound actuarial basis or they will soon disintegrate because of their own inherent weaknesses. Occupation, age and sex of the group must be considered in developing the plan, and problems of administration should be carefully considered.

As far as the relation of the plans to public health insurance is concerned, it is felt that the unions have, at least temporarily, given up the idea of the government providing them with sickness insurance. Walter Reuther, president of the CIO, has said: "There is no evidence to encourage the belief that we may look to Congress for relief. In the immediate future, security will be won for our people only to the extent that the union succeeds in obtaining such security through collective bargaining." The aims of practical "here and now" unionism are being put into effect without waiting for the government to launch any cumbersome compulsory sickness insurance program.

Physicians are interested of course in the sociological and economic effects of the various union plans for medical care on the private practice of medicine.

An important item for consideration is the fact that 42 per cent of all medical care in the United States is now paid for by someone other than the patient: Government agencies, including county, state and federal, Veterans Administration and welfare agencies pay for 20 per cent of all services; 20 per cent more is paid for by employers; 2 per cent by philanthropic institutions. If the rate of growth continues it is logical to assume that as high as 70 per cent of medical services will be paid by someone other than the patient. Since management now has about 30 per cent of its payroll covering fringe benefits, management is beginning to take far more interest in what the employee gets for the money paid out, and will be far more concerned about medical care, since almost all union-negotiated contracts call for payment of all the cost by the employer.

The San Francisco Labor Council, consisting of 141 local American Federation of Labor unions that have approximately 187,000 workers with about 300,000 dependents, has approved for further consideration a city-wide health program which may greatly affect the union health and welfare patterns in many other cities of the United States. The Council early in 1952 hired a young physician, Dr. E. Richard Weinerman, to make a complete survey of all existing health and welfare plans in the San Francisco area, with special emphasis placed on those under A. F. of L. control. His survey, which took about three months, revealed the following: About half of the A. F. of L. members were already protected by existing health

Presented before the Section on Industrial Medicine and Surgery at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

and welfare funds, and the number was expected to increase by 30 per cent by the end of 1952. These funds spent about $7,500,000 in 1951 for health coverage. The Labor Council officials claimed that this money could be spent more effectively through a proposed plan of health centers which were centrally administered, labor controlled, with closed panels of physicians. These centers would cost approximately $200,000 to $400,000 each to build and equip. According to Dr. Weinerman's findings, there was a confused and often overlapping pattern of union welfare funds in San Francisco, as in most other cities. Seventy-one local unions were involved, and 64 joint agreements, administered from 45 separate offices and covered under 24 different insurance carriers and health-service agreements. Eighty-six per cent of the coverage was through commercial insurance companies. The other coverage was supplied by California Physicians' Service, Permanente Health Plan, and Blue Cross. Only one-fifth of the covered workers had their dependents included in health benefits; about half had the option of covering their dependents by paying extra premiums.

It is claimed that in many plans the worker got back in actual "health value" only half the premium paid in his behalf. The rest assertedly was consumed by excessive administration expenses for filing, processing, and paying individual bills on each item of medical service.

Dr. Weinerman's proposal of union-dominated health centers with closed panel staffs would in theory provide comprehensive and complete outpatient and home service for all illnesses for the workers and their families. The community hospitals already in existence would be used for hospitalization. If this plan did not work out, the labor unions would build and maintain their own hospitals. It is estimated that this complete service would be supplied for $4.50 a month for the worker alone, plus $6.00 for his family. These costs could be paid entirely by employers, or in some instances by employers and workers.

The San Francisco plan would be the first to be operated directly by a central labor council. Philadelphia has a medical center sponsored by the A. F. of L. Central Labor Union, but it is administered by the five or six unions whose 12,000 workers are served. Other labor health plans—notably those of the United Mine Workers, the Almagamated Garment Workers, the International Ladies' Garment Workers' Union, and the Teamsters' Union of St. Louis—are administered by the individual unions. The San Francisco experiment would be watched closely by unions eager to make more effective use of their health and welfare funds.

Inasmuch as A. F. of L. members and their families make up more than half of San Francisco's total population,* the new health plan would have a profound impact on the medical economy of the city. The American Medical Association sent staff members from its Chicago headquarters to report on the economic implications of the plan, and the San Francisco Medical Society created a special Labor Health Plan Study Committee to investigate the Labor Council's set-up. Its chairman, in a letter circulated to all local physicians, stated: "Union-labor health plans may bring drastic changes in the practice of medicine in the near future, and the profession must formulate plans to meet the challenge."

The San Francisco Medical Society Study Committee made an intensive investigation of this entire problem. On October 6, 1952, this committee made a report to the board of directors of the Medical Society based on a complete analysis of the Weinerman Report; a careful, detailed study of existing health centers in other parts of the United States (New York, Philadelphia, St. Louis); and extensive conferences with experts in the fields of economics, public health, and insurance. The membership of the Society was informed by editorials in the Bulletin of the San Francisco Medical Society and also by two general meetings of the membership, both so well attended that the auditorium was packed beyond capacity. In a questionnaire that was sent to 1,400 members of the Society, three questions were asked: 1. "Should the membership of the San Francisco Medical Society approve the proposed health centers under the A.F.L. formulated policy?" The result of this question showed that 26 members voted approval and 832 voted for Society disapproval of the health centers. Question 2: "Should the Medical Society formulate a plan of its own to be set up and approved by the Society under which services would be rendered to any and all prepaid medical plans which meet the approval of the Society?" The result showed 776 voting "Yes" and 79 "No." Question 3: "If such a plan is formulated, it will require adoption of a fee schedule to apply to income brackets below a certain income and subject to periodic revision. It must further be under the direct control of the membership of the San Francisco Medical Society. Would you approve a further effort to formulate a fee schedule to be presented to the members at a later date for their consideration?" There were 779 who voted approval, and 76 disapproval.

It was obvious to the members of the Study Committee that the membership wished the board of directors to set Society policy in disapproving the health centers. It was also obvious that the membership was ready to take a bold step forward in medical economic progress by proposing Society formulation and supervision of prepaid health and welfare

*From Dr. E. Richard Weinerman's report—San Francisco Labor Council Survey: Labor Plans for Health, 1952, June.

insurance, with a Society fee schedule to cover such plans. After this report was tendered to the board of directors, a new committee was formed to help draw up the fee schedule, to determine the criteria of medical care to be offered in Society-approved health insurance plans, and to set up a good public relations program which would help to explain to the public the part the physician plays in providing adequate medical care under the system of free choice of physician. This committee will also attempt to explain to the public the facts about the high costs of medical care today and to make clear the physician's position with regard to those costs.

At present the San Francisco Labor Council faces obstacles to its proposed plan of establishing the health centers. In the first place, the Medical Society voted overwhelmingly in disapproval of closed panel health centers with *complete union domination* and without free choice of physician. Another serious blow was that the Rockefeller Foundation turned down the Labor Council's request for a grant to enable it to start the project. The Labor Council seemed to feel that the Federal Government would provide subsidy for this program, but with the change in the national administration this year, this appears to be a remote possibility.

Spokesmen for the unions now have asked, in lieu of the health centers, that the Medical Society immediately set up a fee schedule for *union workers only* which would apply regardless of income.* They have also asked the Medical Society to help develop a plan of comprehensive coverage for all workers and dependents which could be bought for a moderate premium. These requests are now under consideration and it is the hope of the Medical Society that areas of agreement may soon be worked out. In the meantime, two of the smaller union groups have entered the Permanente Kaiser Foundation plan and several others have had to switch to modified benefit plans underwritten by commercial carriers. One large union has adopted a Blue Cross coverage providing limited home and office benefits and complete hospital and surgical coverage, and the union members and physicians appear at present to be satisfied with the plan. The contractors have provided hospitalization coverage alone for their employees. Permanente is making a concerted effort to enter the field of union health plans in San Francisco and Dr. Russel Lee of the Palo Alto Clinic has proposed a medical care plan comprising all the provisions of the Weinerman plan.

It has often been asked what would be the role of employers in the future development of the welfare plans. The Study Committee consulted with employers through the Employers Council of San Francisco. One of the leaders of the Council expressed the opinion that even should there be a depression and a lowering of wages, fringe benefits such as health and welfare insurance would still be paid for entirely by the employer. One big problem is that labor unions have sold their members on the idea of full medical coverage, including not only conservative and surgical treatment of patients in a physician's office, at home or in a hospital, but also a program of preventive medicine entailing full use of laboratory facilities in periodic examination of apparently well persons.

Since it is obvious that the aggregate cost of such a use of laboratory facilities would be great, it would seem wise for those interested in medical insurance of any kind to understand the potential financial burdens it would place on everyone involved. In insurance plans, the cost of caring for the sick is borne by the well. But if diagnostic facilities that usually are used only for the few persons who are sick come to be used quite as much for the examination of the many who are well, the basic principle of insurance does not apply: If all members of a plan receive benefits, the total cost of the plan increases and the premiums that pay that cost must be increased commensurately.

The constant demand for "comprehensive" care covering every minor and inexpensive illness that a person might have, tends to boost insurance rates and to take emphasis away from the much more necessary catastrophic coverage that would protect against serious chronic and disabling illness, which is the real robber of the working man's pocketbook. Such comprehensive insurance coverage has been declared to be prohibitive in cost by most of the recognized medical economists of the nation.

Members of the San Francisco Medical Society are interested in providing the best type of medical care for all the people in the community. They believe fervently that those who are dedicated to the care of the sick are best qualified to know what plans for medical care are best suited to various groups of persons. They are willing to formulate medically sponsored prepaid voluntary health insurance plans and to define and guarantee those criteria which will make these plans workable. Furthermore, they are willing to depart from the time-honored tradition of setting their own fees individually for services and to formulate an adequate fee schedule for the care of persons with annual income of $5,000 or less—the fee schedules to constitute a price list for medical services to persons in that income bracket.

*It should be noted that following extensive study by the committees involved and the Board of Directors of the San Francisco Medical Society, it was decided to try to formulate a fee schedule, but that it should be based on a yearly gross income of $5,000 or less, and apply to everyone in that income group, union member or not. Following this decision, representatives of all specialties worked together in the preparation of a proposed fee schedule. The schedule, together with its principles which are an integral part of it, was submitted to the active members of the society by mail ballot, on June 23, and the resulting vote was 799 to 173 in favor of its adoption. Since then society committees have been at work with representatives of insurance companies, Blue Cross, C.P.S., etc., considering ways and means of implementing the program.

Most physicians do not like fee schedules, for no two value their services alike, and it is difficult to standardize the value or price of personal services. Nevertheless, many specialty groups have worked successfully under fee schedules for years—for example, roentgenologists, medical laboratory specialists, pathologists, and industrial accident surgeons. These fees would have to provide for equitable compensation for specialists and general practitioners, and they should be subject to periodic revision.

Physicians must constantly be alert to the terrific impact on private practice of the proposals for labor-dominated closed panel health centers and any other utopian plan to provide medical service which does not guarantee free choice of physician and medical control of the plan. Too many physicians, busy with their own private practices, are not alert to the changing trends in the social and economic pattern, and cannot or will not concern themselves with the medical problems involved. They still seem to think that a medical society should be organized solely for scientific purposes and the medical education of its members, and should not consider and act upon the economic threats confronting the practice of medicine.

When persons begin to expect good health and sufficient medical facilities and personnel as a matter of course, they are deluded indeed. Good health is prevalent in our country only because countless physicians, dentists, nurses, teachers, and other citizens have struggled against the forces of disease, superstition and ignorance to create it. Anyone who is familiar with the many inferior medical educational institutions that existed in our country before 1910, and who knows of the long years of effort required to transform them into first-class schools capable of graduating large numbers of highly-trained physicians, is fully aware that an adequate number of skilled doctors cannot be expected as a matter of course. Such achievement is the result of hard work, and the American Medical Association has done its share. The doctrine that good things come to one as manna rather than through one's own efforts is the doctrine of dependence on an all-powerful welfare state, rather than belief in individual initiative and responsibility.

It is because of this that the union labor health and welfare problem in San Francisco has alerted our Medical Society to establish a new public relations study group, one of the important functions of which will be to call to the attention of the general public the contributions of their private physicians to the welfare of the country.

There is no doubt that union health plans are successful only when they follow clear-sighted medical direction. It is equally clear that unions are striving to work out medical service plans for their members. Therefore the medical profession has an opportunity to direct these plans into channels which are scientifically and medically advantageous, and such direction should be available if the time-honored standard of good medical practice is to be maintained.

The medical profession could modify the situation which fosters feelings of insecurity with regard to health in the industrial population. The difficulties workers experience in obtaining good medical care under the present methods of distribution create tension and foster political action.

Organized medicine could do more to have good concepts of better distribution accepted if it were to acquire thorough understanding of the health needs and security requirements of the organized industrial workers and take steps to help meet their needs. It is apparent that labor is convinced of the necessity of obtaining better access to good medical service and insurance protection during periods of illness. Action by the medical profession in devising satisfactory means to supply these demands would be far more effective in avoiding non-medical interference with medical practices than any official stand taken up to the present time.

2107 Van Ness Avenue.



THE PHYSICIAN'S *Bookshelf*

MONOGRAPHS IN MEDICINE—Series 1. Editor, William B. Bean, M.D., Professor and Head of the Department of Medicine, State University of Iowa. The Williams and Wilkins Company, Baltimore, 1952. 655 pages, $12.00.

The monographic method can be very helpful in bringing contemporary information to the doctor's desk. This is particularly true in fields where rapid advances have occurred in a very short time and where the average doctor is unable to keep pace with the accumulation of knowledge. The monograph provides a compromise between the monthly medical journal, which is focused on the temporal present, and the fully comprehensive volume which tries to cover the entire field of medical knowledge. The treatment is critical, and digested enough so that the average reader may recognize its utility and significance.

This first volume of a new series of collected monographs covers a wide variety of interests. The subjects have in common only that they summarize work about which there is a wide experimental interest or represent topics which have particular attraction for the editors. The monographs are of much the same type as those published in the quarterly journal *Medicine*. Among the subjects notably well done are those on the Physiology of Body Fluids, Portal Hypertension and Chemical Agents Used in the Treatment of Inoperable and Far-Advanced Neoplastic Diseases.

The reviewer believes there is a place for surveying "the scene from the medium hills, neither staying on the flats of day-by-day affairs nor climbing the high mountain for the grand and inclusive spectacle." He wonders if such attractively written but widely assorted material should not find its way into the magazine periodicals or the loose-leaf systems of medicine. However, since this venture is well begun it is hoped it will be long-lived.

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THE BASIS OF CLINICAL NEUROLOGY—The Anatomy and Physiology of the Nervous System in Their Application to Clinical Neurology—Third Edition. Samuel Brock, M.D., Professor of Neurology, College of Medicine, New York University. The Williams and Wilkins Company, Baltimore, 1953. 510 pages, $7.00.

This third edition of Brock's book is distinguished from its predecessors mainly by an increase in space devoted to description of the newer techniques in neurological diagnosis, notably, electroencephalography, electromyography and cerebral angiography. This reviewer has always been a little puzzled in how to classify this work; it cannot be considered a textbook of neuroanatomy, neurophysiology, nor yet clinical neurology, yet it treats of all these. It is probably more to be recommended to the serious student of neurology than to the medical student or the general practitioner of medicine, although it could be read with advantage by all. It is particularly instructive in giving a rather personalized evaluation of contemporary work in this now very wide field.

THE HISTORY OF AMERICAN EPIDEMIOLOGY. C.-E. A. Winslow, Dr.P.H., Professor Emeritus, Yale University School of Medicine; editor, American Journal of Public Health; Wilson G. Smillie, M.D., Professor and Chairman, Department of Public Health and Preventive Medicine, Cornell University Medical College; James A. Doull, M.D., Medical Director, Leonard Wood Memorial; John E. Gordon, M.D., Professor and Chairman, Department of Epidemiology, School of Public Health, Harvard University; edited by Franklin H. Top, M.D., Professor of Epidemiology and Pediatrics, College of Medical Sciences, University of Minnesota. Sponsored by The Epidemiology Section of the American Public Health Association. The C. V. Mosby Company, St. Louis, 1952. 190 pages, $4.75.

In times of rapid scientific and technological advancement, when the rush of new discoveries overwhelms assimilative capacities, it is easy to put aside historical books with the excuse that they have no immediate value and their truths will not decay. Yet it is at just such times that an occasional backward look has greatest value, helping us to relate our meandering course to the main line of development, restraining our enthusiasm for mere novelty and restoring our belief in the ultimate integration of things which at the moment seem hopelessly confused.

The History of American Epidemiology is a bold title, which might cover a book of broad scope, exhaustive in detail, and mainly concerned with the development of the intellectual discipline of epidemiology. Instead, it is the effort of four leading epidemiologists, well qualified by experience and expository skill to trace both the history of epidemic diseases in the United States and the broad outlines of epidemiological thinking in this country from colonial times to the present. Although brevity constrains the authors to merely list many significant events, the references to source materials are adequate for those who wish to go further into special topics. A large part is written in lucid narrative which can hardly fail to arouse wonderment at the tremendous advances in health conservation in the brief period of our national history, and interest in further study.

The most valuable contribution which the book offers to general medicine is a clear exposition of the concept of disease as the resultant of many forces, both internal and external. While most of us comprehend this in a general way, the more precise formulation which we can get from this book should enable us to serve our patients more fully and more efficiently. While not dwelt upon by these authors, the implications of this concept are broad, ramifying into such fields as the organization of medical insurance and group practice. The physician who thinks clearly along these lines will rarely be satisfied with superficial therapy of symptoms, or even the eradication of infection, except in the most trivial of illnesses.

Without burdening the reader with a complete review of medical history, this volume affords one of those brief backward glances which we need from time to time.

OFFICE PSYCHIATRY—The Management of the Emotionally and Mentally Disturbed Patient. Louis G. Moench, M.D., Assistant Clinical Professor of Medicine and of Psychiatry, University of Utah School of Medicine. The Year Book Publishers, Inc., 200 East Illinois Street, Chicago, 1952. 310 pages, $6.00.

Office Psychiatry by Dr. L. G. Moench, is an interesting book which deals with every phase of psychiatry from the psychosexual development of the child, problems in psychosomatic medicine and analysis to psychosurgery, all in 300 pages, and is limited as a result in explanation and clarity. It is a book of facts and near facts and due to the paucity of content, some of these are barely supported. Actually, little of the book pertains to the problems of office psychiatry; the book has almost nothing to contribute which would be helpful in managing patients.

Although it is quite obvious that the author, through his illustrations—and these are gems—has given evidence of his sympathy and of his understanding of the problems of mentally ill patients, he does not explain how to treat them, and one looks for this particularly in his chapter on "Psychotherapy."

Although many of his statements are factual, some sound dogmatic and rigid and many readers of the so-called "non-oriented" variety may take exceptions to his statements, particularly those found in the chapters on psychosomatic illnesses and their etiology. On the other hand, even psychiatrists of the so-called well oriented variety may feel justified in taking exception to such statements as are found in reference to treatment of choice in psychotics.

In short, the book is a quick look into the field of psychiatry and in reviewing the book, one recalls the quotation the author uses, "Brevity is best if it pursues the therapist rather than the therapist pursuing brevity."

The book should be excellent as one used for introducing psychiatry and its scope such as in introductory courses in schools, and perhaps, with a change in title, for laity.

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DANGER SIGNALS — Warnings of Serious Diseases. Walter C. Alvarez, M.D., Consultant in Medicine, Emeritus, Mayo Clinic. Wilcox & Follett Company, Chicago, 1953. 176 pages, $3.00.

Dr. Alvarez states that he is writing this book to save foolish worriers from needless anxiety and wise persons from avoidable illness and death. This is a lofty purpose. How practical it is in this case is open to question. Such a book must, inevitably, give a little knowledge to many people, and the old saw about a little knowledge being a dangerous thing is most true in the field of medicine. Dr. Alvarez's book is certain to send a number of its readers scurrying to their doctors, to arouse anxiety—without relief—in a number of others and to leave still others with a false sense of security.

The book is written in simple, fluent and highly personal style. It is organized in a logical manner, with a partial listing of the principal symptoms of many major and minor diseases. While it touches on a myriad of conditions, it digs deeply into none. It also dabbles in treatment and prognosis as well as diagnosis. All this makes for a very readable, if dangerously abbreviated, text of medicine.

Possibly the best chapter in the book is the last one—on how to choose a good doctor. While it does not cover all the ways, it does a reasonably satisfactory job.

The principal use of this book should be for the intelligent patient *with* a doctor, the patient who can analyze for himself *until* he gets medical care. This is the rare patient and, unfortunately, the book is far more likely to be seized upon by the apprehensive or the merely curious. The reviewer hopes, along with Dr. Alvarez, that it will relieve more anxiety than it causes—but he doubts it.

THE ESSENTIALS OF MEDICAL DIAGNOSIS—A Manual for Students and Practitioners. Rt. Hon. Lord Horder, G.C.V.O., M.D., F.R.C.P. (Lond.), Extra Physician to H.M. the Queen; and A. E. Gow, M.D., F.R.C.P. (Lond.), Honorary Physician to Household, H.R.H. the Duchess of Kent. **Second Edition** Revised with the Assistance of Ronald Bodley Scott, M.A., D.M. (Oxon.), F.R.C.P. (Lond.), Physician to H.M. Household. The Williams and Wilkins Company, Baltimore, 1953. 462 pages, 6 color and 17 black and white plates, 22 figures and 5 charts, $6.00.

This book is remarkable in that the second edition appears some 25 years after the first. Despite this time lapse the main purpose of the book has not changed: it is to show the student how to start with a minimum of clues and, by the pursuit of proper methods, to construct a diagnosis. The authors have tried consistently to work from the patient and his complaint toward the disease from which he suffers, and not in the opposite direction. This system requires the observation of comparatively few salient signs, which must arouse in the observer the question for specific associated signs and symptoms.

The book attempts to cover the whole field of medical diagnosis in 428 pages. It contains considerable information, is well printed, and is liberally supplied with good illustrations. It is necessarily incomplete, mentioning many physical signs and mechanical aids in passing and leaving more adequate and detailed descriptions for other books.

It can be recommended only for students' reference or as a review text for the graduate with an examination to take. Incidentally, it demonstrates again that the method of teaching in English medical schools is different enough from that in ours so that, on the whole, English texts cannot substitute as primary teaching textbooks in American schools.

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PRINCIPLES AND PRACTICE OF MEDICINE—A Textbook for Students and Doctors. L. S. P. Davidson, B.A. Cantab., M.D., F.R.C.P.(Edin.), F.R.C.P.(Lond.), M.D.(Oslo), Physician to H.M. the Queen in Scotland, Professor of Medicine and Clinical Medicine, University of Edinburgh. The Williams and Wilkins Company, Baltimore, 1952. 919 pages, $6.75.

This new textbook of medicine is written entirely by the staff of the Department of Medicine of the University of Edinburgh. In effect, it represents the course in clinical medicine given at that medical school.

Each section of the book starts with a discussion of the anatomy and physiology of the systems concerned and ends with a review of the measures available for the prevention of disease. There is no orthodox chapter on the infectious diseases, although 28 pages are included in a general chapter entitled "Infection and Disease." There are no chapters devoted to pediatrics or psychiatry. There is no attempt to describe all of the rare diseases or syndromes. The chapter on tropical diseases is abbreviated.

The principal use of this book is for students of the University of Edinburgh and possibly other Scottish universities. It is too incomplete and regional to be used by American doctors or students.

* * *

BEDSIDE DIAGNOSIS—2nd Edition. Charles Seward, M.D., F.R.C.P.(Edin.), Honorary Physician, Royal Devon and Exeter Hospitals; Consulting Physician, Princess Elizabeth Orthopedic Hospital. Williams and Wilkins Company, Baltimore, distributor for E. & S. Lvingstone, Ltd., London, 1952. 380 pages, $3.50.

The first edition of this book was reviewed in CALIFORNIA MEDICINE 73:208, August 1950.

There has not been sufficient change in the second edition to warrant another review.







Top left: "X-rays revealed a huge ulcer crater in the duodenal bulb."

Top right: "Twelve days later the crater was strikingly reduced in size."

Bottom: "Two weeks later another spot roentgenogram revealed complete healing."

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CASE REPORT

J. L., male, age 39, refused surgery even though roentgen study revealed a huge ulcer crater in the duodenal bulb (top left). He was placed on a Pro-Banthine regimen of 30 mg. four times a day. After twelve days of therapy the crater was strikingly reduced in size (top right).

Two weeks later another spot roentgenogram revealed complete healing (bottom). "This ulcer crater was unusually large, yet on 30 mg. of Pro-Banthine [q.i.d.] the patient's symptoms were relieved in forty-eight hours and a most dramatic diminution in the size of the crater was evident within twelve days."

Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, to be published.

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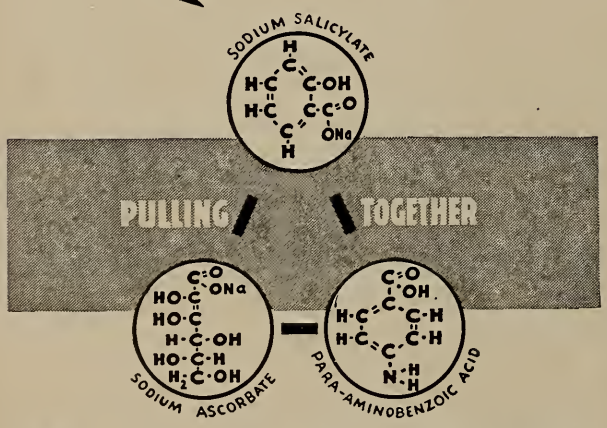
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Emotions and Tensions Are Frequent Causes of Headaches

When something bothers a turtle, he pulls his head into his shell. When something bothers a human being, he pulls his head into the shell of a headache.

A headache is not a disease by itself, but rather a symptom of a disease or functional disturbance. Headaches of emotional or psychogenic origin are extremely common, according to Dr. Noah D. Fabricant, Chicago.

"The emotional, fidgety person besieged by worry, anxieties and fatigue often suffers from headaches," Dr. Fabricant wrote in a recent issue of *Today's Health* magazine, published by the American Medical Association. "In many instances he is not aware of the underlying difficulty responsible for precipitating the head pain.

"The human being similarly can be thrown off balance by emotions such as hate, hostility, anger, rage, resentment, jealousy and suspicion. Professional men, business executives and white-collar workers are vulnerable to psychogenic headaches, which are likely to put in an appearance at the end of a trying day.

"Psychologic and emotional problems vary greatly from person to person. In some people they are produced by unfavorable situations; in others, the difficulty rests primarily in the inner life of the headache sufferer, with the result that he cannot adjust adequately to the usual demands of daily life."

Emotional headaches can be fickle and bizarre. They have no pattern as to time, duration of attack or location of pain, Dr. Fabricant pointed out. There is often a tendency of the patient to exaggerate the extent of the headache, to portray it in melodramatic terms and to boast of the suffering he is compelled to endure. However, such headaches rarely interfere with work, play or sleep, and are usually relieved by a brief nap or an aspirin. These headaches may go on for years without seriously impairing vigor or well-being.

"In many people with chronic headaches, medication is chiefly of value in relieving the discomfort of the acute attack," Dr. Fabricant stated. "But, only by reducing the amount of mental stress can headaches be reduced in frequency and severity and thereby rendered easier to control by therapeutic means.

Occasionally a few people with headaches of emotional origin can take stock of their own affairs and, by noting the circumstances under which distress is produced, do something concrete to rectify the situation. In most people, however, modesty, pride, fear and shame serve to hamper the investigation into the patient's fundamental problem.

"By uncovering the patient's hopes, ambitions, fears, frustrations and anxieties, the physician is frequently able to correlate the onset of symptoms with periods of particular emotional stress.

(Continued on Page 58)

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Emotions and Tensions Are Frequent Causes of Headaches

(Continued from Page 54)

"Finally, when the patient is encouraged to develop insight into the nature of the various factors precipitating his headaches, he is in a better position to help solve some of his problems, and his headaches as well."

However, Dr. Fabricant stressed, headaches of recent origin frequently require immediate investigation as they may indicate the beginning of a serious ailment. A thorough clinical and laboratory study will determine whether or not a disease is present.

Infection Recurrences Stopped by Treatment Of Entire Family

Because of the intimacy of family life, bacterial infections may become rampant within a family. Recognition of family infections and treatment of the entire family, including those not sick, ostensibly offers the best hope for the management and prevention of repeated infections, it was reported in a recent issue of the *Journal of the American Medical Association.*

Although several members of a family may become ill, it is often a given child who is repeatedly

(Continued on Page 62)



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Infection Recurrences Stopped by Treatment Of Entire Family

(Continued from Page 58)

infected by an adult carrier, according to Dr. C. Henry Kempe, San Francisco. Dr. Kempe, who is associated with the division of pediatrics, University of California School of Medicine, stated:

"It is no wonder that such a family reservoir is so frequently present in childhood infections. The great intimacy of family contact predisposes to repeated and massive exposure of a susceptible family member to a carrier whom he sees, frequently touches, and kisses day in and day out."

The most important of the bacterial pathogens, which are carried back and forth in the family group and in which the family acts as a reservoir of repeated childhood infections, are those which affect the skin, intestinal tract and respiratory system. They include infections caused by pneumococcus, influenza, streptococcus, staphylococcus, and Salmonella and Shigella bacteria.

"In the past year I have seen 48 family outbreaks of pneumococcic infection in which two or more members of the family were shown to be affected by the same type of pneumococcus," Dr. Kempe said. "There was a striking variety of types of disease produced by a single pathogen in these family members. Another important factor was the fact that treatment and improvement of a single member did not solve the problem, because reinfection invariably occurred from a 'healthy' carrier member in the family.

"It is clear that the family physician is in a unique position to realize the familial nature of reinfection in these bacterial diseases and to attack the problem by treating the entire family."

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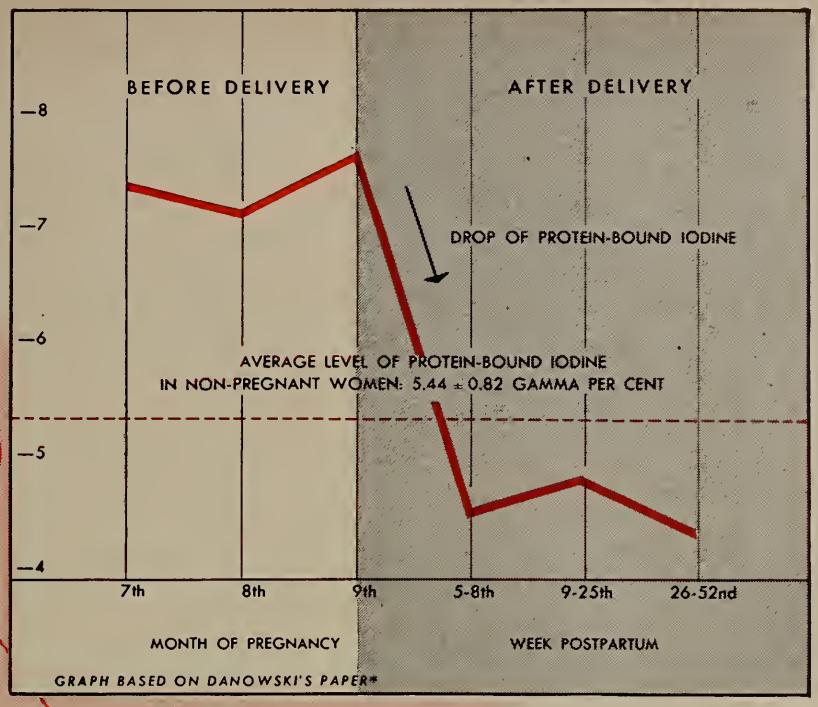
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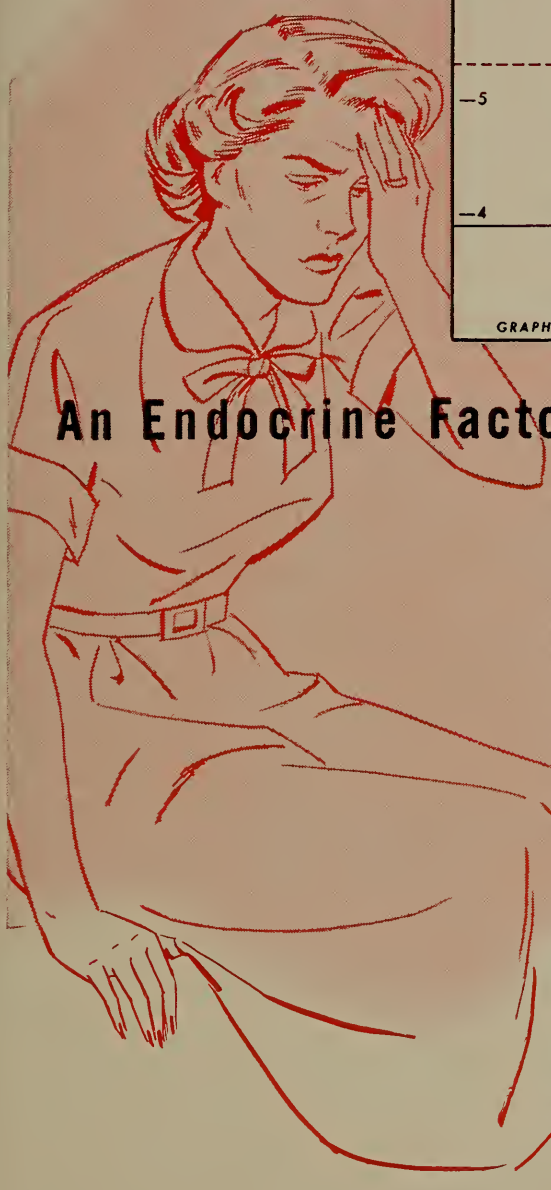
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*Danowski, T. S., et al.: Am. J. Obst. & Gynec. 65: 77-80, 1953.

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Treatment of Respiratory Infections Aided by Enzyme

Inhalation of trypsin—a naturally occurring body enzyme—is extremely effective in ridding the upper part of the respiratory tract of thick sputum the patient is unable to expectorate naturally, it was reported in a recent issue of the *Journal of the American Medical Association.*

The preparation, inhaled in vapor form through facial masks, dissolves the thick tenacious material which impedes the breathing of patients with bronchiectasis, acute atelectasis, and some forms of bronchial asthma, according to Drs. Leon and Albert H. Unger, Chicago. Good results also were obtained in cases of bulbar poliomyelitis requiring tracheotomy, they added.

The doctors described 81 cases of respiratory infections treated with aerosol trypsin. Excellent results were obtained in 14 of the 19 patients with bronchiectasis, in four of the five patients with acute atelectasis, in seven of the 11 patients with bronchial asthma with infectious bronchitis or pneumonitis, and in five of eight bulbar polio patients with tracheotomy, they stated.

On the other hand, only four of the seven patients with paroxysmal bronchial asthma and five of the 31 patients with chronic bronchial asthma with emphysema showed excellent results, they added.

"Aerosol trypsin constitutes an ideal agent for removing from the respiratory tract thick sputum that the patient is unable to expel," the doctors said. "Generally speaking, the thicker the sputum and the greater the volume the better are the results."

"Aerosol trypsin inhalations do not constitute a cure; however, they provide temporary relief to many patients with respiratory disease. When sputum again accumulates, aerosol trypsin should be readministered; good results can again be expected."

With the loss of natural humidifying processes in the patient who has had a tracheotomy, especially when he is in a respirator because of respiratory failure from acute bulbar polio, dried respiratory secretions present one of the most difficult hurdles in management, the doctors pointed out.

As a result of the response shown in the cases of bulbar polio included in this report, the doctors stated they believed "aerosol trypsin may become an important procedure in the management of patients who undergo tracheotomies, especially in those with acute bulbar poliomyelitis."

Such untoward reactions as transient hoarseness, increased asthma, rash about the lips, and nausea and vomiting were noted, but subsided within a short time, according to the doctors. Later in the study, administration of epinephrine and an antihistamine

(Continued on Page 72)

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Treatment of Respiratory Infections Aided by Enzyme

(Continued from Page 66)

prior to inhalation of aerosol trypsin lessened the side-effects.

Dr. Leon Unger is associate professor of medicine at Northwestern University Medical School and is associated with Wesley Memorial Hospital. Dr. Albert H. Unger is clinical assistant at Northwestern University Medical School.

Chronic Ulcerative Colitis May Predispose To Cancer

Chronic ulcerative colitis may predispose to cancer of the colon. Because of the very poor prognosis of such cancers, prophylactic removal of the colon is indicated in many cases, in the opinion of Drs. Elden C. Weckesser and Austin B. Chinn, Cleveland.

Writing in a recent issue of the *Journal of the American Medical Association*, the doctors stated

(Continued on Page 73)



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Chronic Ulcerative Colitis May Predispose To Cancer

(Continued from Page 72)

that 118 patients with ulcerative colitis were admitted to the University Hospitals of Cleveland between 1932 and 1950. There were four cases of carcinoma of the colon (3.4 per cent) in this group. The four patients, ranging in age from 22 to 35 years, died within 17 months following surgery; average duration of symptoms prior to diagnosis of the malignant condition was 10.2 years.

"The very short survival following removal of established carcinoma of the colon in patients with ulcerative colitis constitutes a serious problem," the doctors stated. "It seems, from our experience as well as that of others, that persons with severe, long-standing ulcerative colitis are susceptible to malignant change. Carcinoma of the colon complicating ulcerative colitis has a very poor prognosis.

"At the present it is our opinion that persons with long-standing, severe ulcerative colitis who require ileostomy and those with polyposis should have prophylactic colectomy."

The doctors are associated with the department of surgery and medicine, Western Reserve University, and the University Hospitals of Cleveland.



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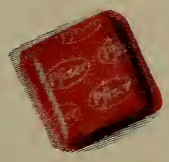
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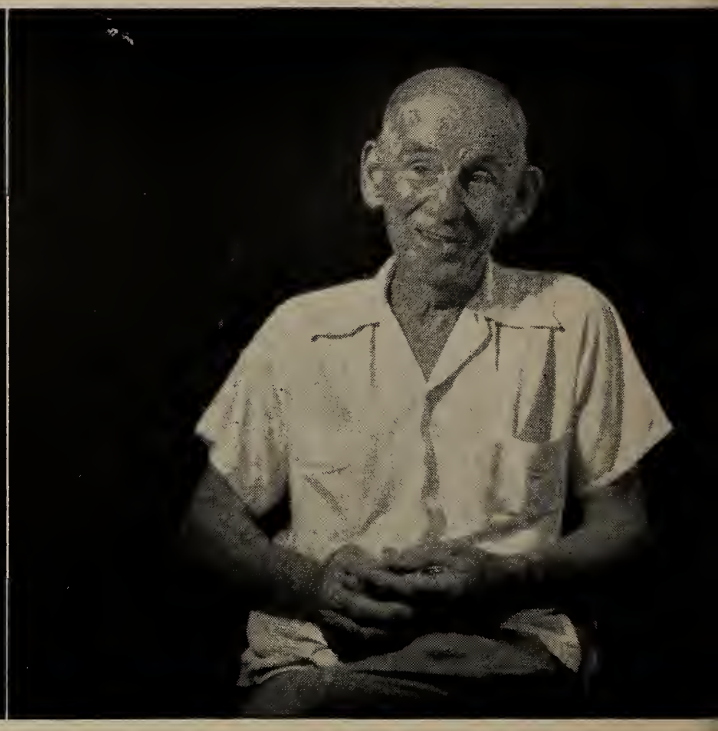
A new case history with photographs

The unique value of 'Dexamyl' in providing symptomatic relief from mental and emotional distress is clearly demonstrated in this case history —reported by a Philadelphia general practitioner.

Patient: K. C. (shown in photos below), age 72. "A case of arteriosclerotic vertigo with socio-marital picture presenting the truer atmosphere for his complaints: 'I awoke one morning and was knocked flat, as I got out of bed, with dizziness.'

"He neglected to disclose that the flattening process was of more insidious development and that a growing feeling of inadequacy regarding his thirty-five year old wife infiltrated his masculine self-esteem. He felt anxious and fearful. An attack of vertigo gave the finishing touch to the whole picture."





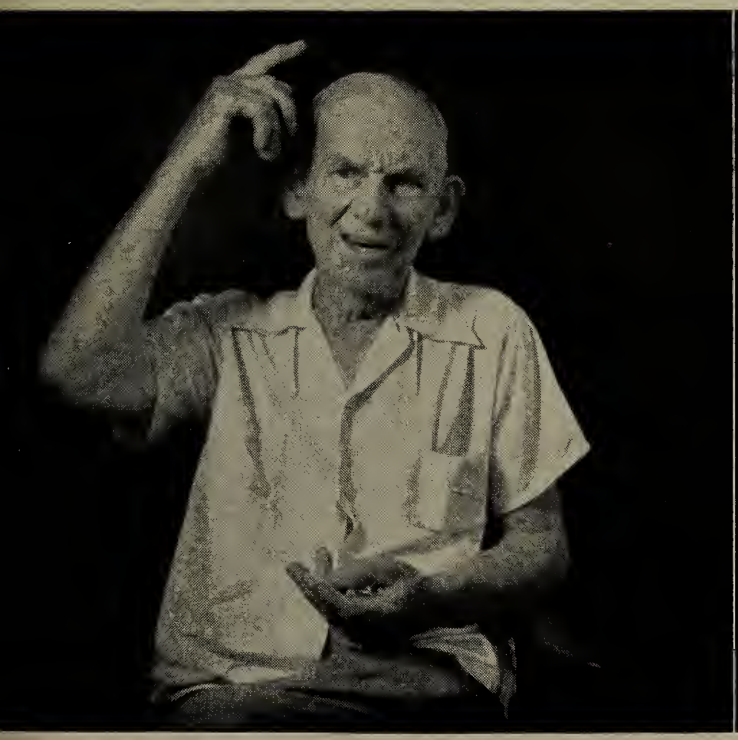
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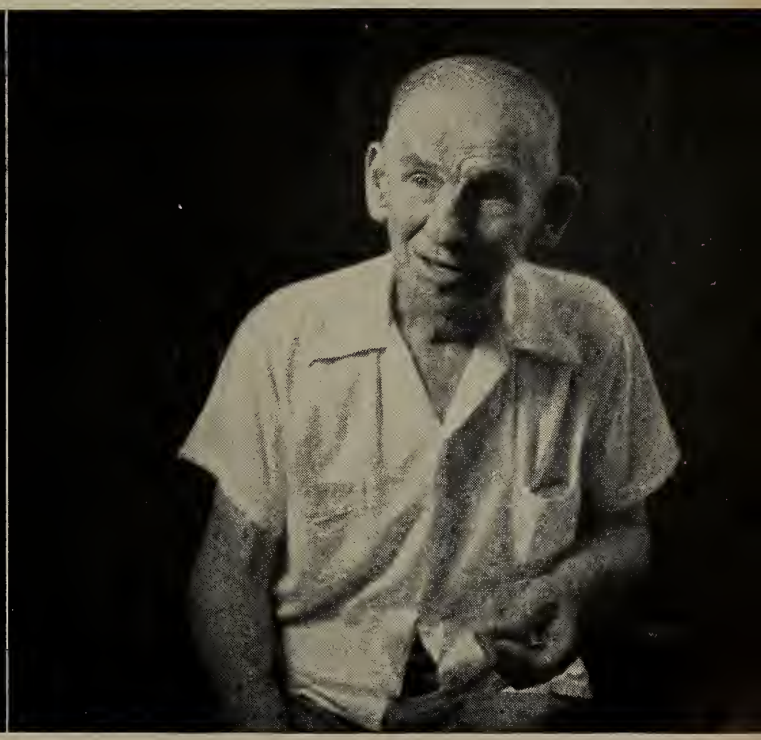
to relieve anxiety, depression and inner tension

Medical Treatment: For supportive therapy he was placed on 'Dexamyl'; one tablet every three hours from 7 A. M. to 4 P. M. "In three days it was reduced to q. 4 h., 7 A. M., 11 A. M. and 3 P. M. He was able to leave his bed after the third day." After 10 days the dosage was reduced to one tablet b.i.d. (7 A. M. and 1 P. M.).

Results: "'Dexamyl' raised his nervous threshold, gave him a feeling of well-being and confidence, which was the best substitute for youth. He decided not to go on old-age security but to go back to his job. This he has done. His smile has some hope in it again."

These unposed photographs of patient K.C. were snapped during an actual interview with his physician.





Each tablet contains Dexedrine* Sulfate (dextro-amphetamine sulfate, S.K.F.), 5 mg.; amobarbital (Lilly), ½ gr. Each 5 cc. teaspoonful of the elixir is the dosage equivalent of one tablet.

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(Continued from Page 70)

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Eating Unripe Persimmons May Cause Stomach Mass

Eating young, unripe persimmons may result in the formation of a ball-like mass in the stomach requiring surgical removal. The mass, called a diospyrobezoar, is the result of the persimmon seeds lodging and swelling in the gastrointestinal tract.

Fourteen such cases were reported by Dr. Charles M. O'Leary, Oklahoma City, in a recent issue of *Archives of Surgery*, published by the American Medical Association.

The initial symptoms of a diospyrobezoar are dependent upon the degree of gastric irritation. Within 24 hours after ingestion of the fruit, most patients have acute abdominal symptoms characterized by abdominal pain, tenderness, nausea and vomiting. In a few days the acute symptoms subside and are followed by the appearance of an abdominal mass. Weight loss and alternating constipation and diarrhea also may occur.

Symptoms become severer in the later course of the disease. This is due either to an uncomplicated gastric ulcer, to a gastric ulcer with complications, or to acute intestinal obstruction, he added. Of the 14 cases reported, 10 had a gastric ulcer; three patients died.

"The ingestion of this available fruit is quite prevalent, and it is surprising that not more of these diospyrobezoars are encountered," Dr. O'Leary stated.

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* Perloff, W. H.: Am. J. Obst. & Gynec. 58:684 (Oct.) 1949.
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Poisonous Berries in Parks Present Hazard to Children

The availability of poisonous berries in some city parks presents a hazard to children, in the opinion of Drs. Henry Rascoff and Sidi Wasser, Brooklyn.

The doctors' comment stemmed from such a poisoning of a 5-year-old girl. The child ate poisonous berries from a bush in a city park. A severe reaction, resembling a diabetic coma, resulted. Following various types of treatment, the child recovered, the doctors reported in a recent issue of the *Journal of the American Medical Association.*

"A public health question is posed by this incident because of the evident availability to children of poisonous berries in city parks," they stated.

"It is difficult to estimate the actual number of accidental poisonings that occur in children, because as a rule only unusual or fatal cases are reported. It has been estimated that the fatal cases alone amount to about 800 a year in the United States."

The doctors pointed out that this case also was unusual as it was the first reported in literature of a condition simulating diabetic coma that followed the swallowing of poisonous berries.

The doctors are associated with the department of pediatrics, Beth El Hospital.

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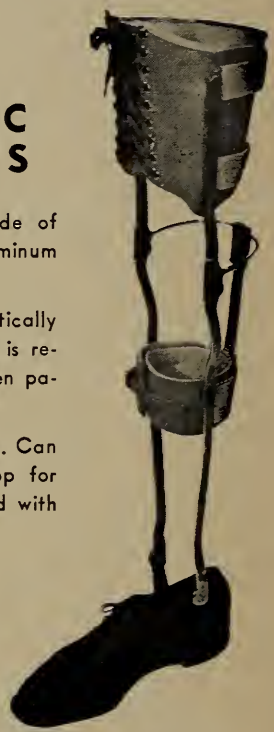
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1. Cayer, D., and Cornatzer, W.: Gastroenterology *20*:385, 1952.
2. György, P.: Am. J. Digest. Dis. *19*:392, 1952.

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Climate Change May Help Cure Dermatosis—If You Forget Troubles

A change in climate and environment may result in improvement in persons suffering from chronic skin ailments, accompanied by some degree of emotional instability. That is, provided they leave their troubles behind them.

Drs. Leslie M. Smith and Henry D. Garrett, El Paso (Texas) dermatologists, writing in the A.M.A. *Archives of Dermatology and Syphilology*, published by the American Medical Association, said:

"Change of environment and change of climate appear to be only two of the factors which may be beneficial to these patients. Change of emotional environment, more rest and relaxation, and slower tempo of life are equally important."

They reported that in the last 15 years there has grown up in the arid portions of the American Southwest a colony of patients with various types of chronic dermatoses. These patients had migrated from colder and more humid portions of the country to take advantage of the sunshine and the warm dry air.

"It is usually difficult to convince these patients that the benefits they receive can be anything but the effect of the sun and dry air, or that rest and a certain amount of adjustment of their emotional difficulties and a lessening of the drive which has become their way of life plays a part in their recovery," the article said.

"They have become a cult of sunworshippers, and many are overdoing the sun treatment to the extent that they are laying a foundation for the future development of keratoses and epitheliomas."

The dermatologists reported that many patients who have come to the Southwest and who brought their major emotional difficulties with them did not fare well until these troubles had been resolved in part, or until the patients were able to accept them without emotional disturbance.

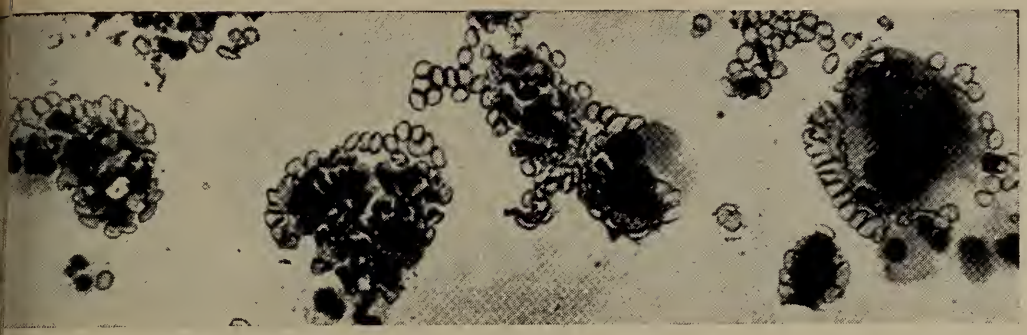
"We have repeatedly seen rapid improvement result soon after such adjustments were apparent," they said. "The businessman who makes a change of climate for his dermatitis and then tries to manage his business in New York by telephone is certainly not going to receive the same benefit from the change as the man who has been able to delegate his work to someone else and to temporarily forget it."

They pointed out that many patients with psychosomatic disease show improvement when they are on a vacation, if the vacation is sufficiently long to encourage relaxation.

Although any pleasant change of surroundings and climate may be helpful in certain types of dermatoses, a mild, warm, sunny climate seems most beneficial as a rule, they added.

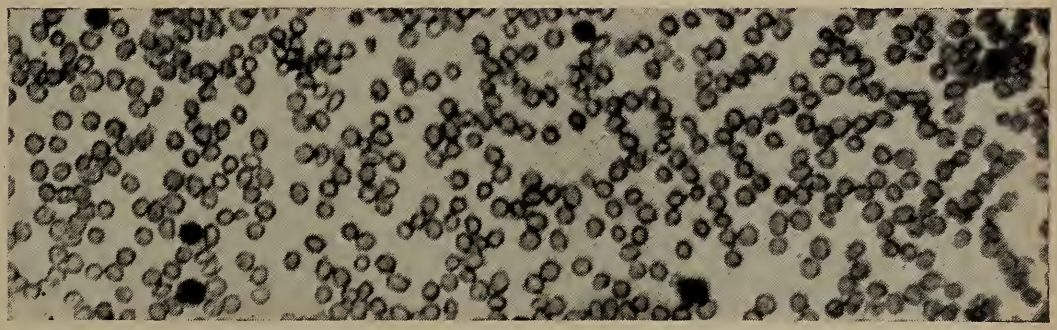
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In the Interest of Medicine Since 1870

1. Case 2, Seaman, A. J., and Koler, R.: Acta Hematologica, 9:153, 1953.
2. Gardner, Frank H., J. Lab. Clin. Med.; 41:56, 1953.

Parents, School Authorities Should Teach Bicycling Safety

It is the duty of parents and school authorities to teach children to avoid the hazards of bicycling, it was stated in an editorial in a recent issue of the *Journal of the American Medical Association.*

Annually in the United States, bicycle accidents take about 600 lives, according to the editorial. Two-thirds of the fatal injuries occur from May to October, when the weather is most favorable for outdoor recreational activities. Nine out of 10 deaths occur among males, with boy 5 to 19 years of age constituting 70 per cent of all the victims in both sexes.

"A number of factors contribute to the prevalence of bicycle accidents. Collision with a motor vehicle is by far the greatest hazard in bicycling, being responsible for at least four-fifths of fatalities. Other hazardous practices of bicyclists include 'cutting in' in front of a motor vehicle; carrying an extra passenger on a bicycle; crossing from one lane to another without signaling; failure to exercise caution at street intersections, curves, or when coming out of a driveway or alley; riding on the wrong side of the street or too far from the curb; riding around or between automobiles; and riding bicycles in poor mechanical condition. Accidents other than those arising from collisions with motor vehicles were due mainly to falls from bicycles."

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Metrazol, a centrally acting stimulant, increases respiratory and circulatory efficiency without over-excitation or hypertensive effect.

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New Drug Aids in Treatment of Heart Condition

Methoxamine hydrochloride (Vasoxyl®), a relatively new synthetic amine, successfully ended two attacks of excessively rapid beat of the upper part of the heart, it was reported in a recent issue of the *Journal of the American Medical Association.*

In two patients with the affliction complicated by vascular collapse, normal heart beat was obtained within a few minutes after intramuscular or intravenous administration of the drug, according to Drs. Alfred J. Berger and Robert L. Rackliffe, New Britain, Conn. The doctors are associated with the department of medicine, New Britain General Hospital.

"This drug is characterized by great rapidity of action" and differs from many other such drugs "in that it does not cause cardiac irritability," the doctors wrote, adding:

"If further experience confirms its safety, it may prove to be the drug of choice in the treatment of supraventricular tachycardia."

No toxic effects of the preparation were noted in the cases reported.

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Operating Room in Hospital	10.00	20.00	30.00	40.00
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Medicines in Hospital	10.00	20.00	30.00	40.00
Ambulance to or from Hospital	10.00	20.00	30.00	40.00
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Adult	2.50	5.00	7.50	10.00
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Some twelve years ago the baking industry began large-scale, nationwide commercial production of enriched breads. Today such breads represent about three-fourths or more of all the marketed white bread in the United States,[1] and rank high among the foods which contribute essential nutrients—in important amounts—at low cost—to the nutrition of the American people.[2]

It is not so long since deficiencies of certain B vitamins and iron were regarded as sufficiently widespread in the United States to merit serious attention. By providing broad distribution of these important nutrients in effective amounts, commercial enriched breads have contributed notably to reducing the incidence of these deficiencies,[1] as reported for instance among patients of charity clinics throughout the country.[3] It is authoritatively believed that the enrichment of bread has improved the health of a large segment of our population.[4]

Per pound, enriched breads today contribute—as required by government definition and standards of identity[5]—at least 1.1 mg. of thiamine, 0.7 mg. of riboflavin, 10 mg. of niacin, and 8 mg. of iron. Thus they are distinctly superior to home-made as well as bakers' white breads of former years.

Each pound of commercial enriched breads contributes also 39 Gm. of protein—wheat flour protein supplemented with milk protein—biologically applicable to the growth processes as well as to tissue maintenance.[2]

Another significant contribution of such breads is 400 mg. of calcium per pound.[6] Last not least, and rather to be praised than to be deprecated, is the low-cost contribution of calories which bread makes to energy needs.

The appended table shows the important amounts of six essential nutrients contributed by six ounces of marketed enriched breads. The table also shows the notable percentages of the National Research Council's recommended daily allowances this small amount of present-day enriched breads represent.

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Nutrients and Calories	Protein	Thiamine	Riboflavin	Niacin	Iron	Calcium	Calories
Amounts	14.5 Gm.[7]	0.41 mg.[7]	0.26 mg.[7]	3.8 mg.[7]	4.5 mg.[6]	150 mg.[6]	468[7]
Percentages of Allowances	21%	34%	14%	32%	38%	15%	20%

*Daily dietary allowances recommended by National Research Council for a sedentary man (154 lb.).

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1. Geddes, W.F.: Cereal Chemists Guard Nutrition, Agricultural and Food Chemistry *1*:38 (Apr.) 1953.
2. Sherman, H.C.: Chemistry of Food and Nutrition, ed. 8, New York, The Macmillan Company, 1952, pp. 597-600; 646.
3. Flour and Bread Enrichment, 1949-50: Prepared by The Committee on Cereals, Food and Nutrition Board, National Research Council, 1950.
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5. Bakery Products; Definitions and Standards of Identity: Federal Register *17*:4453 (May 15) 1952.
6. Data furnished by the Laboratories of The American Institute of Baking, Chicago, Illinois.
7. Watt, B.K., and Merrill, A.L.: Composition of Foods—Raw, Processed, Prepared; United States Department of Agriculture Agriculture Handbook No. 8, 1950.

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Surgery Prolongs Lives of High Blood Pressure Patients

Surgery in certain severe cases of high blood pressure is superior to medical treatment in prolonging the lives of patients, according to a study presented in a recent issue of the *Journal of the American Medical Association*.

The report was made by Dr. Reginald H. Smithwick, professor of surgery in the Boston University School of Medicine, and his associate, Dr. Jesse E. Thompson. Both also are associated with the department of surgery, Massachusetts Memorial Hospital, Boston.

Their study showed that at the end of five years, 81 per cent of 1,266 patients who had undergone surgery were still alive, whereas only 46 per cent of 467 patients who had rejected surgery for medical therapy were living.

It has been estimated that one-fourth of the adult population of the country has high blood pressure, to a greater or less degree, and that the complications account for more deaths annually than does cancer. Hypertension also is responsible for many deaths and much premature disability in young and middle-aged persons.

Dr. Smithwick about 15 years ago developed a radical operative technique involving the removal of large portions of the splanchnic nerves which serve various organs within the abdominal cavity. The result of the operation—called a splanchnicectomy—in many instances is a dilation of blood vessels and a consequent decrease in blood pressure.

Besides surgery, therapy for hypertension includes diets low in sodium and fat, and drugs with a hypotensive or sedative effect.

In the *Journal* report, Dr. Smithwick compared the relative merits of surgical or medical treatment of 1,733 patients with high blood pressure, all of them with the disease existing prior to 1948 and all in stages in which cardiovascular complications had begun to occur.

Of these patients, 1,266 underwent splenchnicectomy and their courses were followed for from five to 14 years. The average age was 42, with men comprising 47 per cent of the group and women 53 per cent.

There were 467 patients who were treated medically after declining surgical treatment for various reasons. Their average age was 45. Men comprised 61 per cent of the series and women 39 per cent. They were followed for from five to 11 years. These, therefore, were considered a control series for evaluation of the surgical technique.

Each group was subdivided according to four stages of the disease. At the end of five years, the mortality in each stage was higher in the medical series than in the surgical series, the report showed. The comparison follows:

	Medical Series		Surgical Series	
	Cases	Dead	Cases	Dead
Stage 1	62	19%	158	8%
Stage 2	200	38%	735	13%
Stage 3	108	71%	244	20%
Stage 4	97	90%	129	59%
Total	467	54%	1.266	19%

The over-all operating mortality ranged from zero in Group 1 to 11 per cent in Group 4, the report said.

"It is evident from a study of the data that the mortalities in all four surgical groups are significantly lower than in the corresponding medical group," the Boston physicians reported. "This is particularly true for groups 2 and 3, where the differences are quite striking and are highly significant."

They emphasize that while the results following operation show a lower long-term mortality, they are not sufficiently superior to medical results to permit them to recommend surgery routinely in all such cases.

"This," they said, "is particularly true for female patients, who appear to do well on medical therapy. It may be that Group 1 men, however, should have surgery, since these patients have a considerably poorer prognosis when treated medically.

"Other Group 1 patients who may be operated on are young patients with high resting diastolic (above 110 mm. of mercury) blood pressure levels, those with intractable symptoms, those with a history of toxemia or other complications of pregnancy associated with hypertension who desire more children, and those patients who for various reasons are unable to follow a medical regimen.

"If the patient falls into Group 2 or 3, we believe that surgery in the form of splanchnicectomy is the treatment of first choice and should be recommended. In refractory Group 2 and 3 cases, diet and drug therapy may have to be added to surgery to achieve maximum benefit.

"In Group 4 cases, surgery may be recommended, provided renal function is adequate and if the patient is a satisfactory surgical risk.

"Surgical treatment should be employed before patients are allowed to progress to Group 4, if the greatest number of worthwhile results is to be obtained.

"At the present time, the only reliable basis for the selection of patients for splanchnicectomy is the effect that surgical treatment is known to have on the life expectancy of patients in each of the four groups."



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Each 5-cc. teaspoonful of VI-DAYLIN contains:

Vitamin A	3000 U.S.P. units
Vitamin D	800 U.S.P. units
Thiamine Hydrochloride	1.5 mg.
Riboflavin	1.2 mg.
Ascorbic Acid	40 mg.
Vitamin B_{12} Activity (by microbiological assay)	3 mcg.
Nicotinamide	10 mg.

I-208A

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Armed Forces Faced with Excess Number of Doctors

The number of physicians who have volunteered for active duty in the armed forces now far exceeds present medical officer requirements. Despite all this, the Selective Service System refused to cancel its latest physician draft call which forced 524 physicians to accept reserve commissions and apply for immediate active duty or be drafted as privates.

The disastrous long-range effects which will result from calling-up an excessive number of medical officers were outlined in an editorial in a recent issue of the *Journal of the American Medical Association:*

1. A wastage of medical manpower resulting in a reduction in the number of physicians available to care for the civilian population.

2. A tendency to use excess medical officers on nonmilitary assignments.

3. A squandering of available medical registrants under the "Doctor-Draft law" which would accelerate the call-up of doctors in priorities 3 and 4.

4. An inefficient utilization of physicians in uniform, with a resulting lowering of morale and general dissatisfaction with military service.

5. A nullification of the newly established ratio of 3.0 per thousand between medical and overall troop strength.

As recently as July 1 of this year, the editorial pointed out, it was the stated opinion of officials of the Department of Defense that the requirements of the Army for medical officers could not be met without recourse to a medical draft call by the Selective Service System.

"A request for 524 physicians was officially made by the Secretary of Defense to the Director of the Selective Service System, who acted immediately to effect the call-up of these physicians through state and local Selective Service agencies," the editorial stated. "Shortly thereafter, a flood of applications for reserve commissions and active duty orders was received from physicians primarily in priorities 1 and 2 who had previously been temporarily deferred for reasons of essentiality and to complete internship and residency training. These volunteers now exceed 1,200, a number far in excess of the present medical requirements of all of the branches of the armed forces combined.

"The termination of hostilities in Korea, a decision on the part of certain medical officers to extend their current tour of military duty until 24 months of service is completed, and the reduction in the ratio of physicians to troop strength ordered by the Secretary of Defense all served to increase the surplus.

"Notwithstanding this excess of medical officers, the Selective Service System refused to cancel its

(Continued on Page 16)

Meat...

and the Important Role of Protein in Hemoglobin Synthesis

Although the relationship between iron and hemoglobin formation is widely appreciated, the important role played by protein in hemoglobin synthesis is relatively obscure. Nevertheless, since globin is just as much a component of the hemoglobin molecule as is iron, the continued synthesis of this protein is necessary for normal hemoglobin production.

It has recently been estimated that in the average adult 8 Gm. of globin is destroyed daily.[1] This means "that approximately 14% of the total dietary protein intake of the average adult [female] is required solely for the re-synthesis of new hemoglobin. These data reemphasize the importance of adequate protein, as well as iron, intake for the maintenance of a normal rate of hemoglobin synthesis in man."[2]

Because meat is an outstanding source of *both* iron and high quality protein, it is always recommended in generous amounts in the dietary management of hypochromic anemia. These nutritional values, as well as its significant content of B vitamins, also make meat an important component of the daily diet of normal persons.

1. Drabkin, D. L.: Metabolism of Hemin Chromoproteins, Physiol. Rev. *31*:345 (1951).
2. The Biosynthesis of Hemoglobin, Editorials, J.A.M.A. *150*:1223 (Nov. 22) 1952.

The Seal of Acceptance denotes that the nutritional statements regarding meat made in this advertisement are acceptable to the Council on Foods and Nutrition of the American Medical Association.

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Armed Forces Faced with Excess Number of Doctors

(Continued from Page 10)

pending draft call, which forced 524 additional doctors to accept reserve commissions and apply for immediate active duty or be drafted as privates by August 28.

"The Army has announced that no more applications for commissions will be accepted after September 1 and is frantically urging its excess reservists to delay their requests for active duty for as much as one year. Even those who are insisting that they be called immediately cannot be placed in training classes until November or December at the earliest.

"It appears to be certain not only that the current draft call was unnecessary but that there will be no more such calls for many, many months to come."

As a result of this situation, many physicians and local communities will be seriously inconvenienced, the editorial said, adding:

"Acting in good faith and on the basis of the assertions by officials in Washington that medical personnel was sorely needed, many of these men have closed their offices or have discontinued their plans for additional residency or postgraduate training. In many instances this discontinuance of training was forced on them because of the prohibition that prevented hospitals from accepting priority 1 and 2 men to fill available residency vacancies.

"Having terminated their civilian commitments on the assumption that they were needed immediately by the armed forces, these physicians are now faced with the prospect of an indefinite status for the next year or more. Possibly it is still not too late for

(Continued on Page 17)



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Armed Forces Faced with Excess Number of Doctors

(Continued from Page 16)

many of them to change their plans, to request a delay in call to active duty, and resume their civilian occupations.

"The government officials charged with the administration of the 'Doctor-Draft law' are obligated to call to active duty only those physicians who are needed and immediately to advise medical reservists as well as Selective Service medical registrants when they can expect to be called for military service."

Hepatitis, Polio on Increase; Measles, Malaria Decreasing

A sharp increase in infectious hepatitis is reported the first six months of this year compared with the same period in 1952, and a sharp decrease in measles. In the same period a significant decrease was noted in malaria among civilians, and a decrease of almost 90 per cent among military personnel. About 25 per cent more acute poliomyelitis cases were reported. The compilation was announced by National Office of Vital Statistics:



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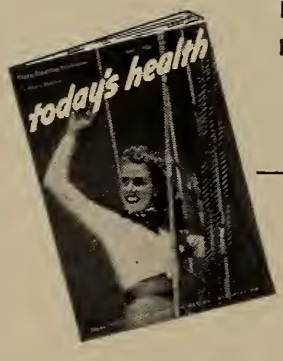
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Microfilm Not Recommended for Heart Disease Detection

Because of its low degree of detection, microfilm is not recommended for use in large surveys for finding persons with heart disease, according to Dr. R. V. Slattery, Oakland, Calif.

"It does not seem that the chest microfilm should be recommended for use in large surveys for heart disease since it is capable of detecting less than one-half of the cardiac abnormalities," Dr. Slattery wrote in a recent issue of the *Journal of the American Medical Association.* "The time and expense involved in such surveys could hardly be justified in a test that has such a limited degree of detection."

Dr. Slattery based his conclusions on the results of a clinical and microfilm study of 682 patients admitted to the medical and surgical outpatient departments of the University of Chicago. He formerly was associated with the department of medicine at the university.

Histories of those patients found to have clinical evidence of heart disease were further studied to determine which of them had a history of heart disease and which had symptoms that were compatible with heart disease at the time of examination, he stated. The incidence of heart disease, as determined from the clinical examination, was then compared with the incidence of abnormal cardiac silhouettes on the microfilms.

"Of the 682 patients, 56 had clinical evidence of heart disease," Dr. Slattery pointed out. "Twenty-five, or approximately 45 per cent, of the patients with clinical evidence of heart disease were detected on microfilm.

"A review of the histories of the 56 patients who had clinical heart disease revealed that 51 either knew they had heart disease or had symptoms compatible with heart disease.

"In addition to the 25 patients with clinical heart disease detected on microfilm, there were 12 patients in whom heart disease was suspected on the microfilms, but in whom no heart disease was found on clinical study.

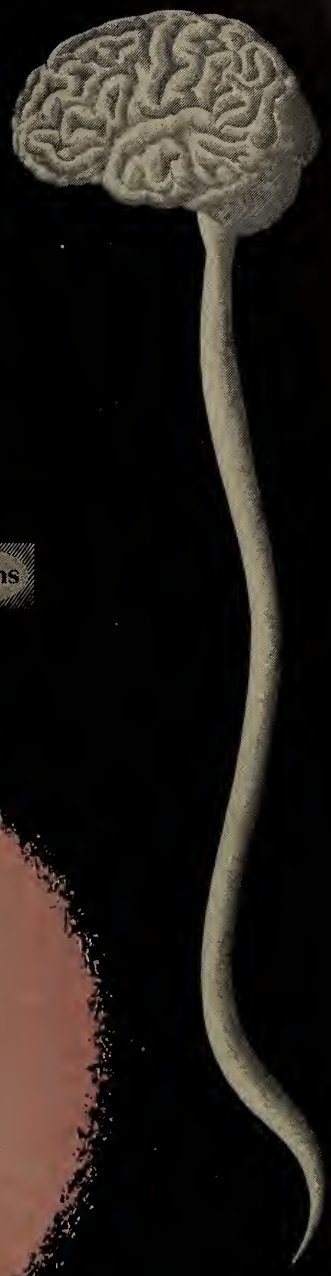
"In the series reported here, 90 per cent of the patients with abnormal hearts had symptoms frequently associated with heart disease, whereas only 45 per cent had abnormal cardiac silhouettes on the small roentgenograms. This would indicate that, in making surveys for heart disease, more persons with abnormal hearts would be found if all those with these symptoms, rather than only those found to have cardiac abnormalities on the microfilms, were subjected to a clinical investigation. Further study would be necessary, however, to determine whether surveys of this type would be practical.

"These findings make doubtful the value of trying to detect cardiac abnormalities on the microfilms of patients being admitted to a clinic or hospital when they will give a complete history as part of their investigation."

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*Hermann, I. F., and Smith, R. T.: JL.-Lancet 71:271 (July), 1951.

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Washing the hair per se will not result in hair damage, a medical consultant wrote in a recent issue of the *Journal of the American Medical Association.* But, if strong cleansing agents are used consistently, the hair and scalp may become excessively dry.

"Years ago, cleansing agents were more often alkaline than they are today, and inferior shampooing results were not rare," the consultant stated.

"There are few persons who find it necessary to wash the hair more than twice a week. The average person in a city may require shampoos once a week. Wetting the hair for grooming purposes is not harmful.

"The type of detergent used in a particular shampoo is a trade secret, unless the manufacturer wishes to disclose it. Some shampoos contain both a soap and a synthetic detergent product. The most satisfactory criterion for determining shampoo action is to experiment with several reputable brands until one is found that suits the individual needs. This experimentation will not result in serious hair damage. The most that will occur is temporary excessive dry-

(Continued on Page 32)

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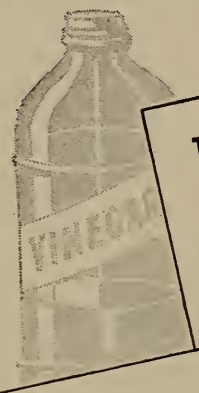
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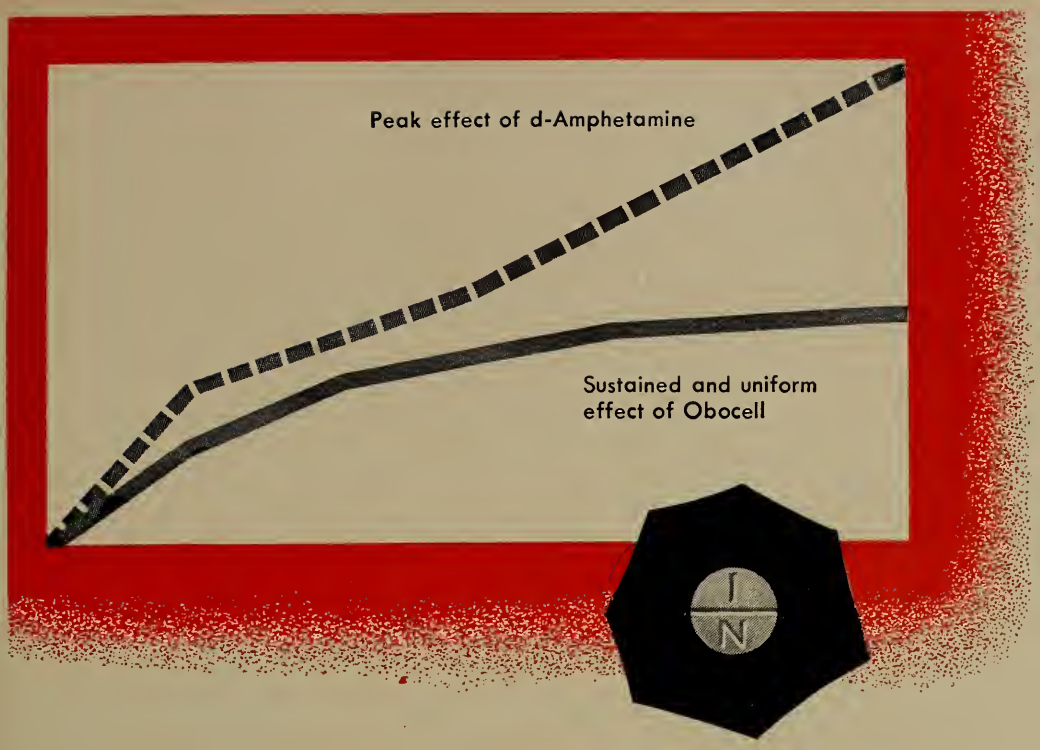
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Examination of Abdomen Aided by Peritoneoscope

Peritoneoscopy is a valuable procedure in the diagnosis and prognosis of cancer involving organs in the abdominal cavity, it was reported in a recent issue of the *Journal of the American Medical Association.*

A peritoneoscopic examination consists of making a small incision in the abdomen and inserting an optical instrument which permits the lighting up of small areas of the abdomen. A system of mirrors in the instrument permits the physician to see the illuminated areas.

Results of 660 peritoneoscopic examinations performed during a three-year period were described by Drs. Samuel J. Zoeckler, Philip G. Keil and George J. Hegstrom, Des Moines, Iowa. The patients included 84 with known or suspected cancers. Peritoneoscopic examination showed:

1. Cancer had spread to other intra-abdominal organs in 20 of the 39 patients with a clinical diagnosis of carcinoma.

2. Nine of the 18 patients who had previously removed cancers and in whom the presence of recurrence or spreading was suspected were found to have metastases.

3. Clinical diagnosis of cancer was proved incorrect in 27 patients.

Peritoneoscopic examinations in many instances eliminate the need of laparotomy, a more extensive exploratory abdominal operation which is commonly employed to determine the cause of abdominal masses and unexplained collections of fluid in the peritoneal cavity, the doctors stated, adding:

"Peritoneoscopic examination affords excellent visualization of the organs within the peritoneal cavity. The mortality is less than 0.1 per cent, and the procedure causes little discomfort. The patient may be hospitalized for one day or less.

"In the evaluation of intra-abdominal malignant lesions, the determination of operability is often difficult. A survey for metastatic lesions is readily accomplished by physical examination and roentgenographic studies. Since we began using peritoneoscopy as a part of our routine study of patients with suspected malignant lesions, 51.3 per cent have been spared laparotomy. In these cases a clinical diagnosis of carcinoma without evidence of metastases had been established.

"Peritoneoscopy is not intended to replace exploratory laparotomy. Like the roentgenologic and laboratory study, it is an aid in the complete evaluation of gastrointestinal problems. It is a valuable procedure in the diagnosis and management of the patient with carcinoma."

Peritoneoscopic examinations were unsuccessful

(Continued on Page 32)

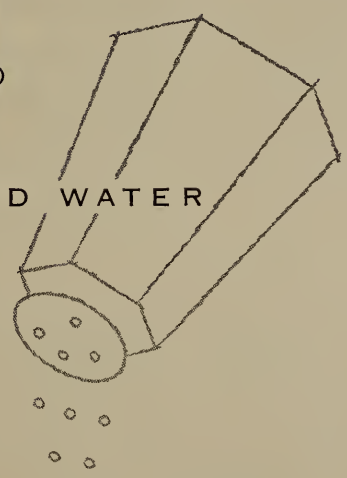


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Criteria for Hair Care an Individual Problem

(Continued from Page 26)

ness and such cosmetic disadvantages as inferior manageability and hair gloss.

"In general, synthetic detergents are efficient cleansers, and some would not be suitable for any but extremely oily hair; however, by the addition of certain chemicals, cleansing ability can be decreased, and a product can be produced that is satisfactory for dry and average hair.

"When excessive dryness of the hair persists despite a change in shampoos, other causes should be investigated."

Examination of Abdomen Aided by Peritoneoscope

(Continued from Page 30)

in several cases, the doctors stated, because such complications as adhesions from previous operations blocked visualization of structures within the peritoneal cavity.

The doctors are associated with the department of internal medicine, Veterans Administration Hospital.

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Office Equipment May Cause Skin Disturbances

Occupational skin disorders play no favorites—the white collar worker may be affected as well as the factory employee handling highly toxic materials.

Skin eruptions among office workers resulting from allergies to office equipment constitute about three per cent of the cases seen by industrial dermatologists, according to Dr. George E. Morris, Boston, assistant clinical professor of dermatology at Tufts College Medical School.

Writing in a recent issue of the *Journal of the American Medical Association*, Dr. Morris reported on an analysis of 1,213 patients with dermatitis caused by industrial factors. Among the patients were 36 office workers who contracted the conditions from paper, carbon paper, glue, cardboard, various machine dyes and inks and the chemicals used to remove them, paper towels, rubber bands, rubber thumbs, pencils and soap.

Three cases were described by Dr. Morris. One was that of a man who had a rash on and between his fingers due to the various rubber products used

(Continued on Page 42)

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Medical Education in United States Reaches All-Time High

For the fifth consecutive year, the total number of students enrolled in approved medical schools has established a new record. The number of students graduated constitutes the largest group ever graduated in one academic year. This was disclosed in the 53rd annual report on medical education, prepared by the Council on Medical Education and Hospitals of the American Medical Association.

Enrollments in the country's 72 medical and seven basic science schools during 1952-53 totaled 27,688, or 2.3 per cent more than the 27,076 enrolled during 1951-52, according to the report which appears in a recent issue of the *Journal of the American Medical Association.*

The 6,668 students graduated during the last year exceeds by 279, or 4.4 per cent, the previous record established in 1947, when at the termination of the wartime accelerated program several schools graduated more than one class. The estimated number of graduates for 1953-54, based on enrollments reported for senior classes in schools, is even greater—6,831.

There was, however, a slight decrease in the size of the entering freshman class for the first time in five years—7,425, or 16 less than the record class of 1952-53—it was shown in the report.

"Figures available at present suggest that the 1953-54 freshman class may show some further slight reduction in the number of students admitted," the report stated. "This leveling off after a period of rapid and marked expansion in enrollments perhaps reflects an adjustment to operation of the present schools at or near their maximum capacity.

"However, there will be further significant increases in enrollments when certain established schools complete expansion programs that are now under way, and when several new schools, now in the final stages of development, are completed."

In addition to those regularly enrolled as full-time students of medicine, medical schools had enrolled a total of 140 part-time and special students working toward an M.D. degree, and 407 students in internships that were a part of the degree requirements of the medical schools at which they were educated. There was also a total of 1,734 students from the United States enrolled in 72 foreign medical schools, located in 22 different countries.

There were 1,463 women in medical and basic science schools during 1952-53, eight less than last year, the report said. The women comprised 5.3 per cent of all students, as compared with 5.4 per cent last year. Women in freshmen classes totaled 399, against 394 last year. They constituted 6.1 per cent of all applicants to medical schools this year, compared with 5.6 per cent last year. The actual number of women graduates increased slightly—363, or 5.5 per cent of the total, as contrasted to 351 last year. The record number of women graduates, 612, was set in 1949.

A total of 715 Negro students, 2.6 per cent of all enrollments, was reported.

The number of veterans enrolled in medical and basic science schools declined for the second year. There were 7,942 veterans enrolled, comprising 28.7 per cent of the total student body, as compared with 11,436, or 42.2 per cent, last year. There were 36 women veterans.

For the fourth consecutive year, the number of applicants for admission to medical schools continued to decrease, the report disclosed. During the year 1952-53, 16,763 individuals applied for admission, a decrease of 3,157 from 1951-52, and 5,516 less than the number who applied in 1950-51.

"This report has emphasized in recent years that the difficulty of gaining admission to medical schools has been grossly exaggerated," it was stressed.

"The statistics presented here amply confirm this exaggeration. The situation in the past year, when there were 2.6 applicants for each place in medical schools was approximately comparable to the year 1929-30 when there were 2.6 applicants for each available place.

"The decline in the ratio of applicants to available places in medical schools that has occurred in the last three years has been due not only to a decrease in the actual number of applicants, but also to the significant expansion in the facilities for training physicians that has taken place in recent years, an expansion that is still continuing."

There are probably a number of causes for the shrinkage in the size of the applicant pool, and a complete analysis of this major problem could not be undertaken in the report, it was stated. However, it was added:

"One major factor is the disappearance of the large backlog of veterans who completed their premedical training following the termination of World War II. Another factor, one that is certain to cause serious concern among medical educators, is the sharp decrease in the number of applicants with superior academic records.

"While, again, one can only speculate as to the cause, it seems likely that this drop is in no small measure due to increasing competition for such talent from other professional fields. If the present trend continues, many medical schools in this country may find themselves hard pressed to recruit adequate complements of well-qualified students."

Medical faculties and medical students alike show a continuing interest in education for family or general practice, the report pointed out. A high proportion of the medical schools sponsor one or more pro-

(Continued on Page 50)

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Office Equipment May Cause Skin Disturbances

(Continued from Page 33)

in his office. The second was that of a stenographer who had an eruption on her hands found to be the result of an allergy to the liquid soap from a soap dispenser in the office building where she worked. The third case was that of a clerical worker who had an eruption on her fingers caused by the paint on the outside of the pencils she was using.

Removal of the worker from contact with the sensitizing agent resulted in alleviation of the skin disturbances, Dr. Morris added.

Medicine Behind the Iron Curtain

Some interesting information has been made available by the American Heritage Foundation of New York City concerning medical practice in Soviet-dominated satellites. A former professor of pediatrics at the Charles University in Prague, now practicing in this country, gives the following evaluation:

"The revolution and regimentation that the medical profession is undergoing behind the iron curtain will make it increasingly difficult for physicians to exercise their profession according to pre-Communist standards. Political reliability has become a

(Continued on Page 54)

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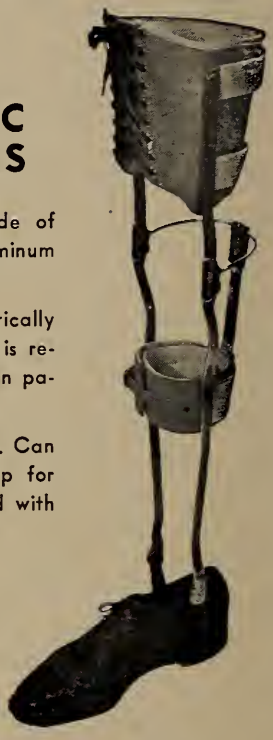
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Medical Education in United States Reaches All-Time High

(Continued from Page 38)

grams specifically designed to induce students to this type of practice.

The report also disclosed that physicians of this country are cognizant of the fact that medical education is a continuous process and that it is their responsibility to keep abreast of advances in the field of medicine. During 1952-53, 64,608 physicians attended 1,341 postgraduate courses.

The heavy burden medical faculties must assume over and above their regular programs for undergraduate medical students was pointed out by the report. A total of 50,445 students other than regular medical students received instruction from medical schools during 1952-53. These included part-time or special students working toward M.D. degrees; dental, pharmacy and nursing students; nonmedical students taking medical courses; physicians enrolled in refresher or continuation courses; physicians enrolled in formal basic science courses; physicians holding appointments as fellows; interns and residents.

The financial plight of the medical schools was stressed in the report, which stated:

"The financial support of medical education continues as a problem of immediate and pressing importance. Despite the steady increase in funds that have been made available to medical schools in the last seven years, medical educators, pointing to the continuing inflation and the continuing demands that are being placed on the medical schools for more research, more service and the expansion of their student bodies, have indicated that many schools are still operating under serious financial pressures."

Estimated funds available to medical schools during 1953-54 are $132,309,000. This includes $87,409,000 in budgeted funds and appropriations, $1,400,000 in funds for miscellaneous projects, $38,200,000 in research grants from outside agencies, and $5,300,000 in teaching grants from outside agencies.

To help alleviate the financial difficulties of the medical schools, the National Fund for Medical Education and the American Medical Education Foundation have been soliciting voluntary contributions from organizations and individuals during the last two years. They have distributed more than $4,750,000 in unrestricted grants to the nation's medical schools since July 1951 and hope to be able to provide at least $10,000,000 annually to aid the schools in meeting the operating costs of their educational programs.

The report was prepared by Dr. Francis R. Manlove, an associate secretary of the Council on Medical Education, Dr. Donald G. Anderson, secretary of the council, and Mrs. Anne Tipner, a member of the council's staff. All are of Chicago.

Value of Ingested Chlorophyll Not Determined

The value of chlorophyll derivatives taken internally as deodorizing agents has not been determined, it was stated editorially in a recent issue of the *Journal of the American Medical Association.*

Although some research has been done, "it seems apparent that no final conclusion can be reached about the deodorizing effects of chlorophyll derivatives until the composition of the various preparations is more exactly delineated, the fate of ingested chlorophylls in the body is determined, and more objective testing has been done," the editorial said, adding:

"For a number of years water-soluble derivatives of chlorophyll have been used for the purpose of eliminating unpleasant odors from wounds or from the air. More recently a number of investigators have reported that chlorophyll derivatives taken orally are capable of reducing unpleasant body odors. On the basis of these and other reports, enterprising promoters have sold tremendous quantities of chlorophyll derivatives to the public in tablets, mouth washes, tooth pastes, and other vehicles. More recently, several authors have questioned the whole concept of chlorophyll deodorization."

The editorial cited numerous experiments made to evaluate chlorophyll derivatives as deodorizing agents for body and general noxious odors. In many cases the derivatives failed to alleviate the odors.

Commercial water-soluble preparations do not contain chlorophyll, which is very insoluble, but rather products of an alkaline breakdown of chlorophyll (so-called chlorophyllins) in which the central magnesium atom of chlorophyll has been replaced by copper or nickel. The final products are believed to be copper or nickel pheophytins rather than chlorophyllins, according to the editorial.

In addition, it added, "several observers have suggested that the activity of chlorophyll derivatives used as space deodorants may be due, in part at least, to the presence in such preparations of some fragrant substance such as pine oil that can mask less pleasant odors, or to the presence of a small amount of formaldehyde, which is capable of paralyzing olfactory nerve endings so that unpleasant odors can no longer be detected.

"The masking mechanism would not, of course, explain the reputed action of ingested chlorophyll in reducing body odors," the editorial pointed out. "So many observers have reported such effects that they cannot be dismissed lightly, but it must be remembered that the sense of smell is one of the least reliable for purposes of quantitative analysis of stimuli because of the phenomenon of rapid fatigue and the potent influence of suggestion."

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Medicine Behind the Iron Curtain

(Continued from Page 42)

necessary adjunct to professional skill in qualifying for good positions in hospitals. All interns entering a hospital are carefully screened by a committee composed of janitors, clerks and nurses."

In Czechoslovakia and Poland, he said, serious deficiencies are found in the medical care and insurance systems. For example, a Prague publication of March 5, 1953, said concerning the new reorganized health service: "Public ignorance of the new organization is still serious. The workers do not know whom to approach in case of illness, where to find a practitioner, where to apply for new glasses, etc. Frequently a patient goes from one medical center to another wasting precious working hours. One of the main shortcomings is still the lack of a good relationship between the medical workers and the patients, and the lack of kindness and sympathy for the ill person. This is the reason why patients have little confidence in the doctors."

In Poland, since Communist absorption, physicians are under the supervision of so-called "elements of social vigilance." No free medical associations exist. In Rumania, political indoctrination courses are compulsory and failure to pass them means dismissal from medical school.

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Practical Applications of Paper Electrophoresis

THEODORE H. SPAET, M.D., San Francisco

• Paper electrophoresis of proteins is a simple, economical method well adapted to routine laboratory use. It can give important diagnostic information concerning serum proteins, and is invaluable in the differential diagnosis of diseases in which there are abnormal hemoglobins.

ANIMAL PROTEINS may be separated and characterized by a variety of methods ranging in complexity from simple salting-out procedures to the elaborate differential sedimentation obtained from ultracentrifugation. One method of protein separation, electrophoresis, is based upon the different ionic charges carried by various proteins at a given pH. If a solution of mixed proteins is placed in an electrical field, different groups of these proteins will show characteristic migration patterns, and may thus be separated and identified.

The clinical value of serum protein electrophoresis has been long known, and has been reviewed in detail by Luetscher,[11] Gutman,[6] and Fisher.[4] However, broad application of this technique has been hampered by the expense and complexity of the equipment necessary for its performance. In 1950 Durrum[1] described an apparatus by which electrophoretic separation of proteins could be accomplished on filter paper. This apparatus, simple and inexpensive in design, can be purchased from commercial sources, or can be readily constructed from available laboratory equipment. Two different types of apparatus are now in use: the original Durrum design in which the paper strips are suspended in air over a glass rod (Figure 1); and the modification suggested by Kunkel and Tiselius[9] in which sheets of filter paper are held between silicone-coated glass plates. Both methods are well adapted to routine use by a clinical laboratory.

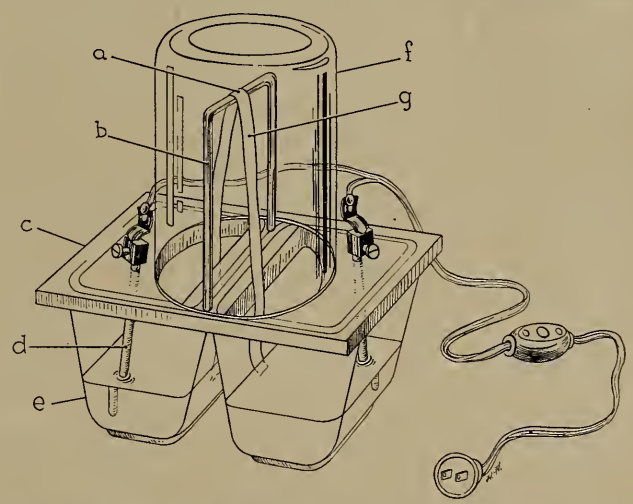


Figure 1.—Paper electrophoresis apparatus. (a) Point of application of test solution; (b) glass rod; (c) plastic cover; (d) carbon electrode; (e) glass basin containing buffer; (f) glass cover; (g) filter paper strip. (Reprinted from Spaet,[14] through the courtesy of the *Journal of Laboratory and Clinical Medicine.*)

METHODS AND MATERIALS

Both the Durrum and Kunkel-Tiselius types of paper electrophoretic apparatus were used in the present study. Detailed descriptions of these techniques have been published elsewhere.[1, 9]

From the Department of Medicine, Stanford University School of Medicine, San Francisco.

Part of the panel discussion on What's New in Pediatrics presented before the Section on Pediatrics at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1952.

In all studies, the apparatus used was charged with veronal buffer, pH 8.6. For the Durrum apparatus the electricity was 110-volt direct current taken directly from the hospital line. At this potential, adequate separation of serum proteins was obtained in 12 to 16 hours; separation of hemoglobins took 24 hours. Higher voltage can be used with the Kunkel-Tiselius apparatus, as evaporation is no problem. Radio "B" batteries connected in series, or a home-made high voltage transformer supplies 810 to 1,200 volts of potential, and runs can be accomplished in two to five hours.

For serum protein studies, undiluted serum was used without modification. Hemoglobin was rendered stroma-free and dissolved in buffer according to methods previously described.[14] Three lambda (three divisions on a pipette for counting erythrocytes) of test fluid were used. After separation, all strips were stained with bromphenol blue according to the method of Kunkel and Tiselius,[9] except that, instead of drying, they were "fixed" prior to staining by immersion in a solution of 10 per cent $HgCl_2$ in 95 per cent ethanol for five minutes.

RESULTS

Serum Proteins: As can be seen in Figure 2, at least five serum protein components can be resolved by paper electrophoresis. Fortunately, bromphenol blue combines stoichiometrically with the serum proteins so that the density of staining is proportional to the concentration of protein component. Thus it is possible to detect both the presence of abnormal proteins and deviations from the normal concentration of physiological proteins. In Figure 2 a normal pattern is shown together with patterns in three specimens of blood from patients with multiple myeloma. Each patient has an abnormal band: one at the β_2 position; one at the γ position; and one which migrates even more toward the cathode than any normal γ globulin. Such patterns may be virtually diagnostic of multiple myeloma when other studies are inconclusive.

Figure 3 shows serial patterns obtained from a 15-year-old boy with the nephrotic syndrome. This disorder resolved following cortisone therapy. The initial pattern shows protein changes which are almost peculiar to this disease, namely: diminished albumin and γ globulin combined with increased α_2 and β globulins. The succeeding patterns reflect the clinical improvement, with restoration of the protein fractions to an almost normal picture. A protein spot seen at the origin represents uncoagulated fibrinogen. This protein persisted even after apparently complete clotting in this patient, who had severe hemophilia.

Numerous other electrophoretic abnormalities of the serum are found in disease, and these are readily demonstrated by the present technique. (There is not space here for an atlas of these patterns. A more detailed discussion of this subject is to be found in Luetscher's review,[11] and in Gutman's monograph.[6])

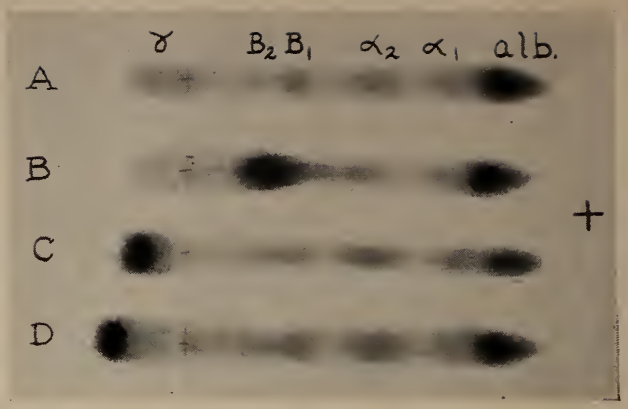


Figure 2.—Electrophoretic patterns of patients with multiple myeloma. (*A*) Normal control; (*B*) abnormal protein migrating as a β_2 globulin; (*C*) abnormal γ component; (*D*) abnormal protein which moves farther toward the cathode than any normal component.

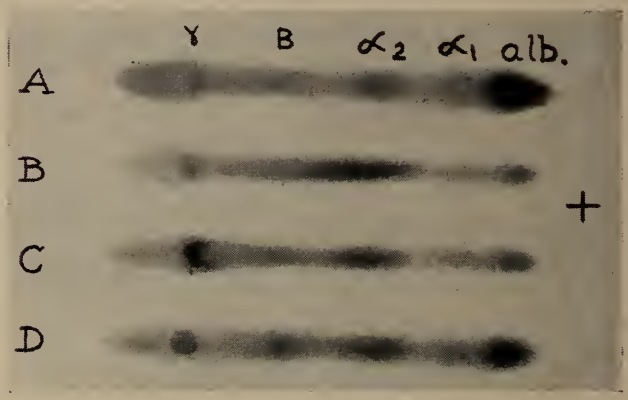


Figure 3.—Sera from a patient with the nephrotic syndrome. (*A*) Normal control; (*B*) patient prior to therapy; (*C*) one month following cortisone; (*D*) two months following cortisone. Note that initially there is a severe hypoalbuminemia together with increased α_2 and β globulins. A partial restoration toward a normal pattern is seen following therapy. (These sera were provided through the courtesy of Dr. Quentin Deming.)

Hemoglobin: Electrophoretic studies of hemoglobin became of clinical importance in 1949 when Pauling[13] discovered different migration properties between normal hemoglobin and that of patients with sickle cell anemia. Since that time three additional electrophoretically abnormal hemoglobins have been discovered, each associated with a different morphologic pattern of erythrocytes and a different set of clinical manifestations. Each abnormality of hemoglobin appears to be transmitted according to Mendelian laws. If any pigment is "heterozygous," so that it is combined with normal hemoglobin, the patient has the respective "trait" and is free of clinical findings. Any combination of abnormal pig-

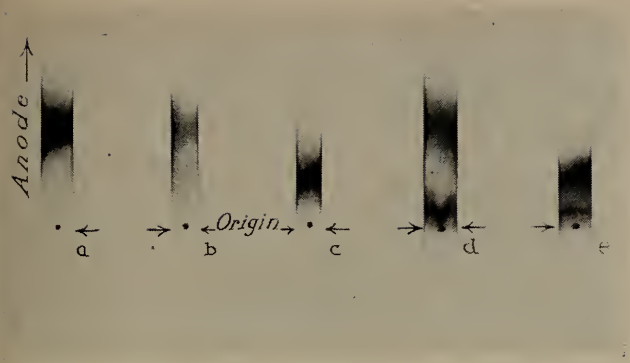


Figure 4.—Electrophoretic patterns of normal and abnormal hemoglobins. (a) Normal; (b) sickle cell trait; (c) sickle cell anemia; (d) type "c" trait; (e) combined sickle and "c" pigments. (Reprinted from Spaet[12] through the courtesy of the *Journal of Laboratory and Clinical Medicine.*)

ments, either "homozygous" or "heterozygous," appears to be associated with a hemolytic process. Sickle cell anemia is a homozygous combination of the sickle type pigment; sickle cell trait represents a heterozygous combination of normal and sickle pigments. Itano recently published an excellent review of this subject.[7]

Figure 4 shows the paper electrophoretic patterns obtained from patients with various combinations of abnormal hemoglobins. "Homozygous" and "heterozygous" combinations are clearly demonstrated. To the author the method has proved most valuable in differentiating between sickle cell anemia, and sickle cell trait with intercurrent anemia. It has also made possible the detection of cases with some of the more recently described pigments—cases that had formerly presented diagnostic problems. In one such case the patient proved to have the first reported "homozygous" type "c" hemoglobin.[16]

DISCUSSION

Electrophoresis on filter paper as described is a procedure well adapted to routine laboratory use. The cost is negligible, the technique can be learned by unskilled personnel in a short time, and many determinations may be run simultaneously. The information gained from electrophoretic studies of the serum proteins exceeds that obtained from the usual protein analyses, and the method is less laborious. It is especially adapted to pediatric needs. Since only minute amounts of blood are needed, capillary blood can be used. In the study of hemoglobin, the information provided by electrophoretic analysis cannot be duplicated by other methods.

A modification of the present technique can provide quantitation of the electrophoretically separated protein fractions. Three methods are available; the bromphenol blue may be eluted from serial segments of the paper with sodium hydroxide and measured in a spectrophotometer, according to the procedure of Kunkel and Tiselius;[9] or similar segments may be subjected to analysis by a microkjeldahl method;[10] and most recently a photoelectric scanning device has been constructed by which the density of bromphenol blue deposited in the paper is read directly.[5] Any of these methods gives reproducible results, which, however, are not strictly comparable to those obtained by older techniques.

In addition to its value as a clinical tool, paper electrophoresis has numerous research applications. Special stains have been used to measure lipoproteins, and valuable information has been obtained concerning patterns in diseases involving abnormal lipid metabolism.[3, 8] Specific serum components such as antibodies have been separated and characterized.[12, 15] A special modification of the method has provided a technique by which serum protein components may be fractionated electrophoretically in quantity.[2] These are a few of the applications which demonstrate the extreme versatility of paper electrophoresis.

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The Management of Allergic Patients

Practical Considerations

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• It is important that physicians know which of their patients have allergic sensitivity, for one patient in seven will at some time have a major allergic disease. New and more serious allergic diseases are appearing, in some cases owing to sensitivity to materials used in treatment. Allergic reaction may give rise to a host of symptoms and in many parts of the body. Sensitivity to one allergen may diminish and reaction to another develop in the same patient; allergic disease may affect one organ at one time, another organ at another time.

The best way to know what patients have allergic sensitivity is to ask them. When patients are questioned, particular attention should be given to eliciting indications of personal or familial hypersensitivity.

Knowing of a patient's allergic background, a physician may be able more readily to diagnose and treat a condition that might otherwise be dismaying. Also he may be alerted as to what not to use—what bandages, sutures, drugs — in treating the patient for any condition.

WHEN A SO-CALLED SPECIALIST addresses an audience of general practitioners, he usually does three things: He tries to convince them of the importance of his specialty, which is excusable. He tries to make specialists of his audience, which is unnecessary. He forgets the broader interests of his audience, which is regrettable, because he misses a golden opportunity to give his hearers something practical to carry home. I need not stress the importance of my field in a state society that is enlightened enough to have a section on allergy. There is no point to making specialists of this group: Why invoke more competition? As for the third count, the writer is an internist with an interest in allergy, who before that was for a number of years a general practitioner, and he hopes he never loses his general viewpoint.

Please note that the title of this article refers to *allergic patients:* It is not meant to be a discussion of allergic diseases.

Do you know who in your practice are your allergic patients? It is important that you should, and for several reasons.

1. *They are numerous:* 15 per cent of them, or 1 in 7, will experience at some time in their lives a major allergic condition, such as asthma, hay fever, eczema or hives. Another 25 per cent will have a less severe, probably more obscure allergic reaction. That covers a big slice of your practice.

2. *They are peculiar people with an inherited defect:* They did not inherit an allergic disease, such as asthma, or sensitivity to an antigen such as ragweed pollen; what they did inherit was the capacity to be sensitized to things more easily than are other persons. They are born that way, they remain so until they die: The defect doesn't change.

3. *But the sensitivity pattern changes:* Old sensitivities to some things may be lost, new sensitivities can develop. Different parts of the body may become new shock organs, while parts once sensitive may lose their reactivity.

4. *The number and potency of allergens is on the increase:* This is unfortunately too true in case of many of our new and most useful remedies.

5. *New and more serious allergic diseases are appearing:* Although the usual allergic reactions are characterized by the completely reversible lesions of edema and smooth muscle spasm, more sinister necrotic irreversible lesions in blood vessel walls, as in periarteritis nodosa, are following the use of foreign sera and various drugs, with increasing frequency and fatal results. The fatal anaphylaxis from horse serum-antitoxin of the past is beginning to be replaced by equally disastrous reactions to penicillin.

Therefore, in a considerable minority of your patients, symptoms of the greatest variety and due to a legion of allergens can exist alone or in combination with almost any of the ills of the flesh, which they may modify, aggravate or minimize in endless variety.

How will you recognize your allergic patient? Ask him! If he comes to you because of pruritus ani, a condition due to multiple causes, he won't tell you

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he has hay fever, because he sees no connection. Yet if you elicit the story of hay fever, the betting odds for sensitivity to a food as a cause of the pruritus are greatly increased. You always ask your patients if they cough, belch or vomit; why not whether they sneeze, wheeze or itch? You will strike oil more often if you do.

Therefore ask every patient about a personal history of asthma, hay fever, perennial allergic rhinitis, eczema, hives, food and drug sensitivities and headaches. Naturally, you don't ask, "Have you perennial allergic rhinitis?" but rather, "When you sneeze, do you sneeze once or twice, or half-a-dozen times in a row?" A normal person is entitled to two or three consecutive sneezes, but six, routinely, are as sure to be allergic as a frank attack of asthma.

Make the same inquiry about the family, but remember that a man knows little about the family history beyond the fact that his uncle was hung for being a horse thief. It takes the women to remember that a great-aunt got hives from Jerusalem artichoke.

If the family history is positive, the patient could be allergic; if the personal history is positive, he is allergic. Then the inquiry should be extended into full details as to *relations of symptoms* to such things as time of year, day of week, time of day, weather, place, work, avocation, holidays, specific activity, tension, fatigue, particular foods, drinks, drugs, menses, intercurrent illness. Find out what the patient is exposed to in bedding, upholstery, floor coverings, animals living or dead, insecticides, cosmetics, hair dyes, residences (including dates of occupancy, heating devices and mildew in cellars). It must be pointed out that it is in history taking that the allergist shines, because he knows what to ask about and takes the time to do it.

You may now decide either that the patient's present complaint has an allergic slant, or that there is no relation at all. But in any event, be sure to *make a red check-mark before his name* as a reminder for future reference that he is allergic.

Routine physical examination may give the hint of allergic disease by the pale boggy nasal mucosa or the wheezing rales of a patient thought to have only cardiac disease.

Eosinophilia suggests allergy (its absence doesn't rule it out) and is ample reason for routine differential as well as total leukocyte counts.

The results of treatment have diagnostic value. The relief of wheezing rales by epinephrine suggests their allergic nature. The patient whose asthma stops when he is hospitalized, only to recur when he goes home, is sensitive to some inhalant in the home, usually house dust.

Of course, you should know what disease pictures could be allergic. There is time only to mention a few that are often overlooked. A fuller discussion is available elsewhere.[1]

In the ***respiratory tract***, *perennial allergic rhinitis* is commonly missed or badly treated.[2] Most people enjoy their sneezes; our grandparents took snuff to make them sneeze. When such patients do consult a physician because of increasing nasal obstruction, he prescribes nose drops or a shrinking spray, and neglects the allergic aspect. Even when polyps develop, they are repeatedly removed without subsequent search for the allergens causing recurrence. Such rhinitis, easily controlled in its beginnings, all too often leads to more serious and difficult asthma. Evanescent *hoarseness* and paroxysmal unproductive *cough* are similar expressions of chronic allergic disease. *Asthma in young children* is usually attended by fever, leukocytosis and inflamed (not pallid) bronchial mucosa, and severe attacks are called bronchopneumonia before their true nature is recognized.

The ***digestive tract*** offers many instances of allergic symptoms that are quite like those due to other causes. A few of them are cited: Recurrent crops of *aphthous ulcers* in the mouth; a wide range of *gastric episodes*, mild and severe, acute and chronic; a respectable minority of cases of *peptic ulcer* (Kern and Stewart[3]); many cases of diarrhea or constipation that are put in the diagnostic groups of *mucous* and *ulcerative colitis;* at least 20 per cent of cases of *pruritus ani. Cyclic vomiting* in children is often allergic.

In the ***skin***, all kinds of *rashes* can be of allergic origin involving things swallowed or contacted, including the very ointments used to treat them.

Allergic blood dyscrasias may be manifested as *malignant neutropenia* and many cases of *purpura*, both with and without low content of platelets, are of similar origin.

In the ***urinary tract***, such purpuric capillary bleedings can produce *hematuria* and *renal colic*, and these may be *unilateral*, suggesting organic disease. *Pain in the bladder* and *nocturnal enuresis* can arise when the bladder is the shock organ. The kidneys may be the site of *necrotizing vascular lesions* in some cases of allergic purpura, and in drug and serum sensitivity.

In the ***nervous system***, there is nothing about an allergic headache that is different from many other kinds of headache, although a fair proportion of them are in the *migraine* syndrome. The syndrome of *Meniére* also includes a fair proportion of allergic nature. A rare instance of *epilepsy* (0.5 per cent of grand mal and a few more of petit mal) can be traced to an allergic cause (a pity there are so few, for in no other types of epilepsy can such complete relief be given).

In the *cardiovascular system* the heart is probably not the shock organ, except when coronary arteries share in *periarteritis nodosa.* But *paroxysmal auricular tachycardia* has an allergic component in a quarter of the cases, as does a rare instance of *paroxysmal auricular fibrillation.* That tobacco plays a part in *thromboangiitis obliterans* is undoubted, but that this is on an allergic basis is not proved. The author has expressed himself at length elsewhere[4] on the cardiovascular aspects of allergic states.

The *eye* supplies its quota of allergic manifestations, including many cases of *conjunctivitis, iritis, episcleritis,* and recurrent *corneal ulcer.* Allergic migraine may be associated with impairment of vision, usually evanescent, but sometimes lasting as long as 20 days and therefore suggesting a brain tumor.

The middle *ear* may suffer as a result of *eustachian block* by allergic edema.

How do you proceed with your allergic patient when you suspect an active allergic disease? If his complaint is simple, and the diagnostic possibilities few, as in many cases of hay fever, you make the necessary skin tests and establish a basis for treatment. But if the picture is more complex, and especially if your diagnostic attempts have been foiled, then waste no further time but seek an *allergic survey* by one capable to make it. This doesn't just mean a set of skin tests by some laboratory technician; you wouldn't take a technician's interpretation of an electrocardiogram. The function of the allergist is to determine causes not merely by skin tests, but chiefly by history and observation, in the light of his experience with and knowledge of allergic diseases. In the past, too many physicians thought of skin tests as the "open sesame" in allergic diagnosis, and when they failed to get a complete answer, abandoned them. Skin tests have strict limitations and many blind spots that must be reckoned with; if the reader is interested, he will find them briefly stated in a recent article by the author.[1] Nevertheless, with all their faults, they provide a valuable diagnostic tool in the hands of those experienced in their use and in the interpretation of their results.

It is hardly necessary to remind general practitioners that the *diagnosis must be complete;* the specialist is oftener in need of the warning to consider the whole patient.

The author[4] takes every opportunity to inveigh against a *common current mistake in the diagnosis of asthma.* It is assumed by some that most cases of asthma can be grouped as "extrinsic," that is, due to sensitivity to external causes; or as "intrinsic," nonallergic, due to causes within the patient, notably infection. It is indeed true that in older asthmatic persons, infection is increasingly in the picture, aided and abetted by poorer circulation, lowered resistance and perhaps beginning bronchiectasis. Chronic cough, purulent sputum, at times leukocytosis and mild degrees of fever are much in evidence. A further cause for error is supplied by the lessening reactivity of the skin as people grow older, until negative reactions are obtained to substances which still cause symptoms in the bronchial tree. All of this leads to the serious error of assuming that asthma in the aged is rarely due to allergy, but is usually "intrinsic" and infectious. Indeed Rackemann[6] has claimed that extrinsic asthma rarely begins after the age of 45.

This is grossly in error. An allergic factor, if properly sought for, can be found in the majority of elderly asthmatic persons. Even in those whose asthma begins at 70, the clue to the allergic factor is often supplied by a history of other allergic reactions, especially allergic rhinitis, that go back to early youth. That infection plays a frequent and important role in the asthma of the elderly is not denied, but that it is solely responsible is seriously challenged.

The *role of psychic factors* in conditions commonly considered allergic has been extensively and at times heatedly discussed. The author has time only to give his conclusions: Psychic factors can pull the trigger, but they do not load the gun. He has yet to see an asthmatic in whom no allergic and only psychic factors were present, and, except in rare instances, the allergic factor is preponderant.

Here are some practical points in the management of your allergic patient. The first principle of all allergic practice is that *100 per cent avoidance* of all causative allergens gives *complete clinical relief.* But putting a plastic cover on the pillow or mattress does not effect complete avoidance of the contents. Yet this mistake is being made today, times without number. It is of course absurd to change the pillow on only one of twin beds in the room, or even only on one-half of a double bed. Nor is complete avoidance achieved by the most meticulous attention to the furnishings of the bedroom, if a hot-air heating plant brings in dust from all the rest of the house. Filters in hot-air systems are not wholly efficient. Nor is avoidance of a food achieved if the ingredients of mixtures eaten away from home or in many packaged foods are unknown. Food-sensitive patients must always obey the rule: If you don't know what's in it, don't eat it.

Partial avoidance is of course better than none. Many things that are not wholly avoidable may nonetheless be much reduced in the environment; and this may be enough to achieve comfort, or to make a desensitization program effective.

For, *if symptoms persist in spite of partial avoidance, desensitization must be tried.* This involves

relatively few things: pollens, molds, a few epidermal substances, some occupational dusts and house dust. With these programs most of you are familiar. A few cautions apply: (1) *Make haste slowly;* small doses, gradually increased, spaced 5 to 7 days apart, work best. (2) *Sterilize your syringe and needle by boiling or autoclave:* alcohol can precipitate your antigen and so make it wholly or partly useless, and it doesn't protect against hepatitis. (3) For testing and treatment use an extract of dust from the patient's *own* home, not a stock house dust extract.

Complicating infection calls for surgical drainage where needed (chronic sinusitis), the use of vaccines, in selected instances of chemotherapeutic agents and of climatotherapy. Here, again, some cautions apply: *Use small initial doses of vaccine,* lest an existing bacterial sensitivity lead to severe, even serious reactions. It would be carrying coals to Newcastle to discuss climate here. But one is reminded of Robin Burns's quip that climate brings people to California and weather sends some of them away. Coastal fogs and local smog are unfavorable to most asthmatic persons, especially the elderly.

The matter of the *use of drugs* brings us back to the main point, which is the *allergic patient,* not an allergic disease. No matter why he comes to you, you must think of the *allergic* part of him before launching on any treatment, and some diagnostic procedures. No matter how you treat a sprained ankle, you must reckon with the possibility of skin sensitivity to the adhesive tape, or the more serious sensitivity to the local anesthetic you plan to inject. A surgeon who uses silk sutures in the neck of a silk-sensitive patient with goiter will be picking out silk knots for the next six months. You could cause a serious or fatal reaction to the contrast medium in your search for a lung cancer or a kidney lesion. Therefore you must heed the *red check mark before the patient's name* and follow these rules:

Don't give him drugs that can do harm because of his allergic state. Thus, don't give an asthmatic person, especially if he has fever, any drugs that will cut down an already scant and viscid sputum. That means no *atropine* and no *antihistaminics;* they can precipitate a serious, even fatal, status asthmaticus. Don't give such a patient an *opiate,* lest he die in a matter of minutes of asphyxia. Opiates, unwisely given, are still the commonest cause of death in asthma.

Don't give him a drug to which he is sensitive. Always ask him about allergy, especially about previous treatment with, or reactions to, the drug you have in mind. If he has previously received it, give it cautiously; he might be sensitive. If he has had any previous reaction to the drug, don't give it.

Don't sensitize him unnecessarily. The newer drugs, especially the chemotherapeutic agents, are all potent allergens. Each one, as it appeared, was hailed as low in toxicity and of negligible allergenic significance, only to prove quite the reverse when lapse of time had permitted its second and later courses in patients. Penicillin is no exception: It is now the cause of frequent prolonged reactions of the serum-sickness type, some of which are going on to fatal periarteritis nodosa; most recently, the severe anaphylactic reactions are being encountered, and a score or more of sudden deaths have been reported. Therefore give your allergic patient such drugs only when he really seriously needs them. Don't treat minor ailments with these potent drugs, lest a later grave illness find him deprived of their life-saving help. Don't shoot sparrows with 16-inch guns.

If your allergic patient develops an allergic reaction to a drug, stop giving the drug at once. A tragic error is to fail to realize that many drug reactions are characterized by fever, which is in turn mistaken for a continuation or aggravation of the disease under treatment, calling for further use of the drug, with disastrous results. If the drug reaction persists unduly after the administration is stopped, and especially if there develops a rising eosinophilia, there is the threat of periarteritis nodosa. This calls for the immediate use of cortisone.

This brings the discussion to its final topic: ***the use of corticotropin (ACTH) and cortisone in allergic patients.*** The following facts have been established as to the effects of these substances:

They are palliative, not curative, in allergic states. Although symptoms are held in abeyance, and even skin reactivity to allergens may be lessened and occasionally set aside, there is no diminution or change in the underlying sensitivity, and all manifestations recur upon sufficient reexposure to the cause.

They mask infection without affecting the infective agent. As Salter put it, they prove it takes two to make a quarrel: The body stops reacting with fever and symptoms, but the infection continues and can kill the non-belligerent patient.

Prolonged administration of corticotropin is followed by hypoplasia of the pituitary gland and hypertrophy of the adrenal glands; when treatment is stopped, the pituitary regains some, but not all of its loss after months, while the adrenal glands shrink to less than their former size. *Prolonged administration of cortisone* results in some pituitary hypoplasia and sharp reduction in size of the adrenal glands, and neither the enlargement nor the shrinkage is completely reversed for months. Patients after two years on cortisone are said to have died quickly from acute infections, with extreme adrenal atrophy observed at necropsy. Prolonged administration of either drug leaves the patient worse off than when he started. Remember this, above all, in children.

Corticotropin is a "good" allergen and has sensitized asthmatic persons so that reactions followed reinjection. Cortisone is a relatively "poor" allergen and only few cases of sensitivity have resulted.

The usual *untoward side effects* of both drugs are more pronounced in older patients.

Unexplained convulsive seizures, some with fatal outcome, have developed in asthmatic persons given cortisone for long periods.

The safe indications for short term (7 to 10 day) use of these substances therefore include *acute severe allergic reactions due to known and avoidable causes:* severe drug reactions; contact dermatitis, especially if severe and exfoliating; serious ivy poisoning; severe serum sickness; trichinosis; severe Loeffler's syndrome. In any of these conditions they may be life-saving. In the severest, corticotropin is given by intravenous drip. In the others, cortisone is used: 300 mg. the first day, dropping by 100 mg. daily to 100 mg. a day for a week, then tapering off by reductions of 25 mg. daily.

Additional short-term uses are: to prepare an asthmatic person for an emergency operation, to prepare a patient sensitive to Lipiodol® for a needed bronchogram, and to treat a patient in status asthmaticus, but only when all other means have failed.

Long-term therapy is justified in *allergic conditions of unknown cause that threaten life,* such as periarteritis nodosa and some severe purpuras; also in chronic beryllosis that threatens life.

Hundreds of papers have been written on such therapy in *asthma*—many of them by persons who had the drugs and some patients, but not much experience with asthma. They rushed into print with glowing reports little more justified than if someone had relieved a few asthmatic seizures with epinephrine. There is no curative effect from the treatment. It could be justified only as a short-term measure in severe cases before other therapy has had a chance to take effect, and as a long-term measure in cases in which all other treatment has failed. Yet all too often these legitimate indications are offered to cover up a short-cut around proper diagnosis and curative treatment, which are thereby improperly delayed. It is as yet impossible to pass final judgment on such cases, but the ill effects are becoming increasingly evident. Let there be none on your consciences.

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Health Insurance Is *Good* Medicine

EACH MEMBER OF THE California Medical Association recently received six copies of a new pamphlet titled "Health Insurance Is *Good* Medicine." Designed to help the public understand health insurance better, the pamphlet defines health insurance, reviews various plans and offers guideposts for the public's protection. Each member was asked to make this pamphlet available to his patients through his office.

The pamphlet was prepared by the C.M.A.'s Medical Services Commission and Public Relations Department.

Comments will be welcomed.

Medical Services Commission

Traumatic Pancreatitis

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• *Traumatic pancreatitis should be considered as a diagnostic possibility when trauma to the epigastrium is followed by phenomena suggestive of intra-abdominal injury. The presence or absence of hyperamylasemia should be established immediately. Even when traumatic pancreatitis is believed to exist, any suggestion of injury to other viscera should indicate laparotomy. Retroperitoneal rupture of the duodenum may simulate traumatic pancreatitis in all respects, including hyperamylasemia. X-ray studies may be of value in differentiation.*

Non-complicated traumatic pancreatitis is best treated conservatively. Gunshot and knife wounds of the pancreas should be drained.

TRAUMATIC PANCREATITIS, characteristically a disease resulting from injury incurred in collisions of vehicles, is increasing as traffic accidents increase. Since this potentially lethal condition is often overlooked as a diagnostic possibility and in light of the fact that in many instances actions at law for compensation for damages hinge upon the diagnosis, all clinicians should be well informed regarding the diagnosis and treatment of this condition.

The experience with pancreatic trauma at the Los Angeles County Hospital was summarized as a basis for this report.

Naffziger[6] in 1943 reported nine cases of traumatic pancreatitis and stressed the importance of serum amylase determination in diagnosing the condition. In 1952 Mathewson,[4] reviewing the records of 171 cases of pancreatitis at the San Francisco County Hospital in a nine-year period, noted that 17 were the result of trauma, non-penetrating trauma in 9 instances and penetrating injuries in 8. Mathewson concluded that conservative therapy is the treatment of choice when pancreatitis is the only significant intra-abdominal lesion resulting from the injury.

Trauma to the pancreas during operative procedures in the upper abdomen may result in pancreatitis postoperatively. Stern[10] reported that the pancreas was injured more often than was recognized during operative procedures. He indicated that the pancreas was particularly liable to injury during operation on the gallbladder with exploration of the common duct, and during repair of duodenal ulcer, splenectomy, pancreatic biopsy and right nephrectomy.

Although cases in which traumatic pancreatitis was due to penetrating wounds are included in the statistics from the Los Angeles County Hospital upon which this report is based, only the group in which the disease resulted from closed injury will be emphasized. In all cases the diagnosis was made either on the basis of clinical features in association with elevation of the serum amylase or by observation at operation or autopsy. Since acute pancreatitis occurring after abdominal operations may be caused by factors other than trauma, postoperative pancreatitis will not be considered except to cite an example of one type in the discussion of treatment. All cases listed under the diagnosis of acute pancreatitis at the Los Angeles County Hospital for the period from 1939 to 1951 were used as a source of material in this report. The year 1939 was selected as a starting point because that was the first year that serum amylase determinations were used in the hospital. During the 12-year period 1,328 patients were admitted for acute pancreatitis. In 42 cases (3.1 per cent) the disease resulted from trauma: non-penetrating trauma in 18 cases and penetrating injury in 24—20 by gunshot and 4 by knife wounds.

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PATHOGENESIS

Frequently noted in the history in traumatic pancreatitis is impact of the epigastric area of the patient with the steering wheel of a car in head-on collision. Pancreatic injury may also occur when an erect pedestrian is struck across the epigastrium by the front fender of a car or when a pedestrian is knocked down by an automobile and a wheel passes over the epigastrium. Cyclists involved in accidents are peculiarly liable to pancreatic injury, the blow to the abdomen being delivered by the handlebars.

Pancreatic contusion is generally believed to involve rupture of minor or major components of the duct apparatus with consequent effects due to activity of liberated enzymes.[2, 3] The area of the pancreas most likely to be damaged as a result of a blow or crushing force is that which overlies the vertebrae. Although the middle segment of the pancreas

DATA ON 18 CASES OF NON-PENETRATING TRAUMA TO PANCREAS, LOS ANGELES COUNTY HOSPITAL 1939-1951

Case No.	Cause	Laboratory and Pathologic Change	Associated Injury
1.	Automobile accident, steering wheel.	Pancreas contused as it crossed over vertebrae.	Ribs fractured bilaterally.
2.	Automobile accident, steering wheel.	Elevated serum amylase.	None
3.	Ran into wire, blow to epigastrium.	Elevated serum amylase.	None
4.	Stream from garden hose turned on abdomen.	Elevated urinary diastase.	None
5.	Kicked in abdomen.	Elevated amylase and diastase. Developed pseudocyst. Fracture of pancreas.	None
6.	Motorcycle accident, struck in abdomen by handlebar.	Pancreas edematous with hematoma in head. Fat necrosis. Pancreas biopsied and drained. Developed collection which was drained.	None
7.	Auto accident, steering wheel.	Elevated serum amylase.	Numerous fractures.
8.	Run over by auto.	Pancreas edematous with greenish fluid under capsule. Elevated amylase.	Laceration of liver.
9.	Riding bicycle and collided with automobile.	Tail of pancreas lacerated and bleeding. Laceration sutured and area drained.	Ruptured spleen, fractured ribs.
10.	Fell down stairs.	Contusion around head of pancreas with hematoma.	Laceration of spleen, retroperitoneal hematoma, contusion of jejunum.
11.	Auto accident, steering wheel.	Elevated serum amylase.	None
12.	Run over by automobile.	Contusion of area over vertebral body.	Contusion of jeunum and mesentery, multiple fractures.
13.	Motorcycle accident, handlebar struck abdomen.	Elevated serum amylase. Developed collection which was drained.	Fractured tibia and fibula.
14.	Kicked in abdomen.	Elevated serum amylase.	None
15.	Pedestrian struck by automobile.	Pancreas edematous with fat necrosis. Elevated serum and peritoneal fluid amylase.	Hematoma of left kidney, tear in second portion of duodenum.
16.	Automobile accident, steering wheel.	Pancreatitis with fat necrosis.	None
17.	Automobile accident.	Contusion of pancreas.	Skull fracture, crushed right chest.
18.	Automobile accident, steering wheel.	Tail of pancreas lacerated and bleeding.	Ruptured spleen, laceration of serosa of right colon.

is the most vulnerable, injuries of the head and the tail do occur. In the present series there were two instances of injury to the tail of the organ, with associated rupture of the spleen in both. Since rupture of the ducts is usually within the pancreas rather than open laceration, it may be overlooked at operation. In light of the fact that injury to the pancreas commonly is masked at the time of operation by retroperitoneal hematoma, it is advisable to consider such a lesion presumptive evidence of pancreatic injury.

A process quite different from that resulting when the ducts are ruptured has been observed, as in a case in the present series: The wheel of a car had passed over the upper abdomen of the patient, and at operation the entire pancreas was observed to be swollen, but there was no hemorrhage, and the pancreas was surrounded by green tinged edema fluid. It is suggested that the cause of such a diffuse process might be multiple minor acinar ruptures secondary to an acute rise in intraductal pressure due to force applied diffusely over the extrahepatic biliary system and pancreas.

In the present series there were no recognized instances of splenic vein thrombosis, and none of chronic or recurrent pancreatitis. Neither sepsis nor abscess occurred. (Sulfonamides or antibiotics were administered in most instances.) Pseudocyst developed in three of the 14 patients with non-penetrating injury to the pancreas who lived, in one who recovered from a gunshot wound and in one who had a knife wound. Pinkham[12] noted that the development of pseudocyst is a likelihood in cases in which patients with considerable injury of the main pancreatic duct or its branches are treated conservatively.

DIAGNOSIS

Acute onset of abdominal pain following a blow to the abdomen is typical of traumatic pancreatitis. The pain is usually generalized but greatest in the epigastrium, and it may radiate through or around to the back on either side. Sometimes it is so severe as to cause suspicion of rupture of a hollow viscus. Nausea and vomiting follow and are usually persistent and may be accompanied by manifestations of shock. Upper abdominal tenderness and rigidity are characteristic and usually followed by distention. Peristalsis is decreased or absent. These symptoms are not diagnostic of pancreatic injury, for injury to viscera in the same general area may cause similar symptoms. However, if only the pancreas is involved, tenderness usually is restricted to a transverse zone across the mid-epigastrium. If hyperamylasemia is noted by laboratory study, a diagno-

sis of traumatic pancreatitis can be made tentatively.[5] It is then necessary to make sure there are no other injuries that, if present, would require laparotomy.

A particularly confusing differentiation is that between traumatic pancreatitis and retroperitoneal rupture of the duodenum.[1, 8, 9] Differentiation is essential because duodenal rupture demands immediate surgical correction. The two lesions may coexist. Traumatic rupture of the duodenum like traumatic pancreatitis often follows a blow to the upper abdomen and the serum amylase may be elevated due to escape of pancreatic secretion from the duodenum into the retroperitoneal space and its subsequent absorption into the blood. An x-ray film of the abdomen may be helpful in differentiation. Retroperitoneal rupture of the duodenum may produce gas in the retroperitoneal tissues appearing either as diffuse emphysema or as gas along the right psoas muscle. In traumatic pancreatitis there may be distention of a segment of the bowel, either of the transverse colon or the upper jejunum, due to enzymatic mesenteritis. If duodenal rupture is suspected but no evidence of retroperitoneal gas can be seen in the x-ray film, Lipiodol® should be injected through an inlying nasogastric suction tube and another film taken to determine the presence or absence of extraluminal Lipiodol.[8] Barium sulfate should not be used as a contrast medium because of its objectionable features as a foreign body. When the area is visualized at laparotomy, either lesion may be associated with retroperitoneal hemorrhage that masks the visceral injury. However, the hemorrhage may be slight, and with either lesion there may be greenish edema fluid in the upper retroperitoneal tissues.

When clinical features logically suggest pancreatic trauma, it is mandatory that the presence or absence of hyperamylasemia be established. This is most satisfactorily accomplished by making several measurements of the amylase content of the blood. If renal function is unimpaired, the urinary diastase content will indicate the amount of amylase in the blood. If possible, both tests should be carried out. Such observations are of importance in even relatively mild injuries, to establish for medicolegal reasons that such injury has occurred.

TREATMENT

Traumatic pancreatitis will heal spontaneously unless there is persistent leakage of some part of the duct system. Sufficient leakage will lead to the formation of a pseudocyst ("pancreatic collection"[7]), almost always in the lesser omental bursa. The dynamic activity of the collection may be mild to severe, depending upon the amount of leakage. Surgical drainage must be carried out.

Non-operative management is preferable for uncomplicated traumatic pancreatitis. The essentials of this regimen are the same as for spontaneous pancreatitis: Nasogastric suction, maintenance of fluid and electrolyte balance by intravenous therapy and the use of anticholinergic drugs. A "wide spectrum" antibiotic should be given. Demerol® is the drug of choice for control of pain.

If it is not possible to determine that there is no associated visceral injury that would necessitate surgical treatment, laparotomy should be done. In such circumstances the problem of specific treatment to the pancreatic injury arises, as it does also when unsuspected injury of the pancreas is noted fortuitously in the course of operation for another condition. It is the authors' opinion that in either instance drainage is indicated if there is laceration of the pancreas, lest escaping fluid gather in the peritoneal sac and cause complications. If the surface of the pancreas appears to be intact, however, it is recommended that the abdomen be closed without pancreatic drainage, for in approximately 80 per cent of the cases due to non-penetrating trauma the laceration is not sufficient to be productive of pseudocyst. Moreover, without a demonstrable laceration precise drainage cannot be accomplished. If a pseudocyst develops later, drainage then can be accomplished with adequate precision.

When the abdomen has been opened and traumatic pancreatitis observed, the question arises whether or not to decompress the biliary duct system. Because often there is a common channel, it seems logical, theoretically, that cholecystostomy should decompress the pancreatic ductal apparatus in most cases.

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The Treatment of Infectious Diseases

Advances in the Use of Antimicrobial Drugs

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• *Penicillin remains the most useful antibiotic for treatment of infections due to organisms sensitive to this drug because of its bacteriocidal properties and its freedom from toxicity. Enormous doses may broaden its antibacterial spectrum and it may act synergistically with certain other drugs.*

New penicillin compounds have been developed which serve such special purposes as (1) concentration in lung tissue, (2) maintenance of therapeutic concentrations in the blood for long periods after injection, (3) avoidance of allergic reactions and (4) prolongation of therapeutic content in the blood after oral administration.

Erythromycin and carbomycin may be effective against bacterial infections not sensitive to other antibacterial drugs.

Streptomycin combined with dihydrostreptomycin is less toxic than is either drug used alone.

Isoniazid is a valuable antituberculosis drug, especially when combined with streptomycin.

Viomycin may be useful in treating tuberculous infections that have become resistant to other specific drugs.

THIS PRESENTATION is intended to evaluate briefly some recent significant advances in specific antibacterial therapy with penicillin, erythromycin, carbomycin, streptomycin, viomycin and isoniazid.

The commanding position of penicillin among antibiotics has been maintained and even advanced by recent developments. It has at least four outstanding valuable attributes: (1) It is bacteriocidal in high concentrations. (2) High concentrations in blood and tissue are attainable, since dosage may be increased almost without limit, if necessary, without toxic effect. (3) High concentrations also broaden the spectrum of activity of this drug. (4) Penicillin acts synergistically with some other drugs.

Bacteriocidal action may be necessary for the cure of some chronic infections, such as subacute bacterial endocarditis, although bacteriostasis is adequate for the cure of some acute diseases with natural immunity mechanisms, such as pneumonia. Massive doses of penicillin, from 10 million to 100 million units daily, given intravenously, may have bacteriocidal effects not possible with conventional doses. When it is given in such quantities the sodium salt of penicillin G should be used rather than the potassium salt to avoid serious potassium intoxication.

Although it has been referred to as a narrow spectrum antibiotic, penicillin may better be designated a highly specific antibiotic, for it may be much more potent than any other substance against certain infections. When given in massive doses it is effective against many kinds of pathogenic agents that are not affected by usual doses. A bacteriologist is often an indispensable consultant to a clinician dealing with serious bacterial infections, for the best choice of drug or combination of drugs and the dose necessary may depend upon sensitivity tests in vitro.

The action of penicillin is sometimes considerably enhanced by use of another antibacterial drug with it. Bacitracin or streptomycin combined with penicillin may kill bacteria which are relatively insensitive to either of these antibiotics alone. It is also true that combinations may be less effective than penicillin alone, especially when the second drug is one of the so-called broad spectrum antibiotics, such as aureomycin, chloramphenicol, or terramycin.

The clinical usefulness of penicillin has been enhanced with the appearance of new special purpose penicillin compounds. Four types of such compounds that have been developed recently deserve special mention:

1. Penethamate hydriodide (penicillin G diethylaminoethyl ester hydriodide) concentrates in lung tissue and in pulmonary secretions more than in other organs. Chronic pulmonary infections, including bronchiectasis and pulmonary abscess, may respond to treatment with this ester of penicillin in moderate doses. Large doses of procaine penicillin may yield similar results. As iodine content of penethamate hydriodide is considerable, the drug may be useful as an expectorant, but it cannot be given

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to patients who have idiosyncratic sensitivity to iodides.

2. Dibenzyl-ethylene-diamine dipenicillin (DBED dipenicillin) is most remarkable for the fact that a single injection (600,000 to 1,200,000 units) may maintain the content of the drug in the blood at a low therapeutic level for from two to four weeks. Its greatest field of usefulness is thought to be in the prophylaxis of rheumatic fever but it opens a possible field for study of specific prevention of some other infectious diseases as well.

3. Allergic sensitivity to penicillin is frequently troublesome and substantial progress toward prevention of such reactions has been made since the appearance of hypoallergic penicillin compounds, especially 1-ephenamine penicillin and penicillin "O." These compounds may be tolerated by patients with a history of cutaneous allergic reaction to penicillin.

4. Oral penicillin therapy is more feasible now that sustained content in the blood may be realized for at least eight hours after a single dose of 200,000 units of either dibenzyl-ethylene-diamine dipenicillin or a combination of penicillin G with probenecid.

Erythromycin and carbomycin are new antibiotics with a spectrum of activity similar to that of penicillin. It is by no means clear when they should be chosen in preference to the better known antibacterial drugs unless in vitro tests indicate that the organism in question is more sensitive to one of the new preparations. Many penicillin-resistant staphylococci and non-hemolytic streptococci are found to be sensitive to erythromycin and to carbomycin. There is some cross resistance between erythromycin and carbomycin but the two drugs are not identical. They do not have the same range of bacteriocidal possibilities that penicillin has, and unlike penicillin they cannot be given in massive doses.

The neurotoxic potentialities of streptomycin have now been reduced substantially by the practice of combining streptomycin with dihydrostreptomycin. The logic of this combination is very simple: Since streptomycin toxicity is ordinarily limited to an effect upon functions of the vestibular branch of the eighth cranial nerve, and the toxicity of dihydrostreptomycin, which has similar therapeutic effect, ordinarily affects only the auditory branch of this nerve, combining them in equal amounts greatly reduces the risk of toxic damage without sacrifice of therapeutic value. Animal experiments and clinical studies have shown that this advantage is realized.

Streptomycin neurotoxicity is rarely observed, regardless of the type of streptomycin used, if dosage is limited to 1 gm. given every second or third day; and this amount is adequate to control most chronic tuberculous infections when combined with para-aminosalicylic acid (12.0 gm. daily). These drugs are usually given for a period of one year or more in the treatment of chronic pulmonary tuberculosis.

Nearly all patients with active tuberculosis now receive specific antibacterial drug therapy and often conservative collapse therapy. Pulmonary resection of residual foci of inactive disease remaining after nine to twelve months of specific medical treatment is frequently recommended as a means of preventing subsequent relapse. Such treatment more nearly approaches curative and definitive therapy than any used heretofore.

Isoniazid has now been studied clinically for more than a year in many institutions and its usefulness and limitations are becoming well established. When used alone it is often inadequate to control chronic tuberculosis because of the early appearance of resistant bacilli, frequently within two or three months. When it is combined with streptomycin there is striking added therapeutic benefit and some delay in the appearance of resistant bacilli. Isoniazid is an extremely valuable preventive of tuberculous complications of pulmonary resection, and some surgeons have urged that if intrathoracic operation is contemplated, isoniazid not be used until the time of operation. Isoniazid diffuses through tissues more readily than do other antituberculosis drugs and appears in the cerebrospinal fluid freely. For this reason it has become a very valuable addition to streptomycin and para-aminosalicylic acid in the treatment of tuberculous meningitis.

Viomycin, a new antibiotic useful for the treatment of tuberculosis, is now available commercially. Its precise place in relation to other antituberculosis drugs is not clear, except that it is of value in the treatment of infections that have become resistant to the more familiar drugs. With the appearance of new specific drugs such as isoniazid and viomycin, the plight of patients with an infection resistant to streptomycin and para-aminosalicylic acid is not so serious as it formerly was. The need for precise bacteriologic studies of drug resistance has become obvious and has been met in most hospitals and sanatoriums.

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Radiological Aspects of "Collagen" Diseases

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• *The collagen diseases, an ill-defined group of clinical entities, have as their basis a generalized alteration of the connective tissue, especially of its extracellular components. They include periarteritis nodosa, disseminated lupus erythematosus, dermatomyositis, scleroderma, rheumatic fever and rheumatoid arthritis.*

The radiological findings in a series of cases of these diseases were reviewed.

In 28 cases of periarteritis, 20 cases showed some abnormal findings in the thorax. These included pleural effusions, pulmonary changes, pericardial effusions and cardiac enlargement.

In 32 cases of disseminated lupus erythematosus, thoracic findings were noted in 21. They resembled the changes found in periarteritis.

In some 25 cases of scleroderma, diverse radiological findings were noted. These included "cystic" changes in the lungs (one case) and pulmonary "hives." In the intestinal tract esophageal and small bowel alterations were found, both ectatic and stenotic. In the soft tissues of the "pressure areas" variable degrees of calcification were observed.

Dermatomyositis is the rarest of the collagen disease group; only one autopsy-proven case is available for study. Chest x-rays taken a year before death showed slight cardiac enlargement. The lungs were clear.

In acute rheumatic fever, x-ray examination may disclose pericardial or pleural effusion, and so-called rheumatic pneumonitis; the latter has no specific diagnostic features. Soft tissue swellings may develop around some of the joints.

In rheumatoid arthritis, joint changes are numerous and fairly characteristic, and are followed in many cases by fibrous or bony ankylosis and deformities of considerable degree.

Awareness of the commoner radiological changes in this entire group of diseases should result in earlier establishment of diagnosis, especially in the more obscure examples.

As evolution proceeds, some diseases are conquered or become less common while others develop or become recognizable as separate entities. For some of the latter order a nomenclature is invented and the clarity of epithet is usually in direct proportion to the knowledge of etiologic delineation. Among diseases for which the nomenclature is as yet inept—for the reason indicated—are the so-called collagen diseases.

What are the collagen diseases? What are their radiologic aspects? What is ostensibly new concerning them? Some progress toward answers to some of these questions may be made by reviewing the cases of 86 patients with diagnosis of collagen disease who were observed in hospital practice during the last several years.

The collagen diseases are a group of disorders characterized anatomically by generalized alterations of the connective tissue, especially of its extracellular components. The following are currently accepted as members of this group: Periarteritis nodosa, disseminated lupus erythematosus, dermatomyositis, scleroderma, rheumatic fever and rheumatoid arthritis.

The term *polyarteritis* is synonymous with *periarteritis nodosa*. Because of the predominance of vascular changes, this disorder (and, to a lesser extent, generalized lupus erythematosus) may also be referred to as *visceral angiitis*. Disseminated lupus erythematosus is also known as *acute lupus erythematosus* or *generalized lupus erythematosus*.

Becker[2] and others suggested that since the systemic manifestations of Schonlein-Henoch *purpura*, of *erythema nodosum* and of certain cases of *glomerulonephritis* show similar involvement of connective tissue, they too may belong to this group of diseases. Ehrick[4] and associates, on the basis of animal experiments, would also include *serum sickness*. Kampmeier[10] suggested that the necrotic changes found in afferent renal arteries in both malignant hypertension and periarteritis nodosa have more than coincidental relationship. Stewart[18] expressed belief that thromboangiitis obliterans and ulcerative colitis also are collagen diseases.

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ETIOLOGY AND PATHOLOGY

The cause of the collagen diseases is not known. Several investigators have produced fibrinoid changes of connective tissue experimentally by mechanical

and by chemical means.[3] These observations tend to invalidate the supposition that hypersensitivity is the sole cause of collagenous degeneration. Indeed, it has been observed that undue significance should not be attached to the occurrence of fibrinoid changes in localized connective tissue collagen. Pathologically this is merely a form of degeneration, of unspecified cause, and it occurs in a wide variety of dissimilar diseases. This fact of course greatly diminishes the clinical usefulness of the term *collagen disease*. However, until a better term is devised and until more is known about the fundamental nature of the diseases in question, it is probably justifiable to continue the use of the makeshift. In this connection, it is to be noted that the microscopic findings are not merely of changes in the collagen fibers alone but of changes in the connective tissue elements as a whole.

Histologically, connective tissue consists of cellular elements and extracellular substances. The cellular elements consist of fibrocytes and fibroblasts, macrophages, lymphoid cells, mast cells and various other leukocytes. The extracellular substances are composed of an amorphous ground substance and three known types of fibers, collagenous, reticular and elastic. The basic lesion in the collagen diseases consists of a swelling of the interfibrillary ground substance as well as swelling of the fibers themselves. The location of these basic lesions and the type of response of the adjacent tissues are somewhat different in the different collagen diseases, and constitute the anatomic basis by which they may be at least partly distinguished.

Not all clinical subdivisions of the collagen diseases are clearly demarcated. Sometimes, at necropsy, lesions peculiar to or predominant in some of the different entities may be observed in one and the same subject. For example, a fatal case may show: (a) Chronic skin lesions, as in scleroderma, (b) atrophy of skin, and degeneration of muscle, as in dermatomyositis, (c) proliferation of endothelial capillary tissue, as in disseminated lupus erythematosus, (d) non-bacterial verrucous endocarditis,* (e) infiltration and dilatation of arterioles, as in periarteritis nodosa, (f) pericardial changes, as in rheumatoid infection, and (g) articular and tenosynovial changes, as in rheumatoid arthritis.

A case embodying all these diverse manifestations was reported by Kampmeier.[10]

Miale[14] mentioned that Krupp first emphasized a characteristic urinary finding in "visceral angiitis"; he found the pattern in 14 of 21 cases of periarteritis nodosa and disseminated lupus erythematosus. It consists of the simultaneous presence of elements usually characteristic of the early stages of nephritis (erythrocytes and erythrocytic casts), and elements usually seen in the chronic stage (broad casts, waxy casts, fatty casts, and "oval fat bodies"). This finding has been referred to as "telescopic urinary sediment."

*Non-bacterial verrucous endocarditis, as in Libman-Sacks syndrome,[11] is now known to be part of the changes occurring in disseminated lupus erythematosus.

CLINICAL TYPES AND SOURCE OF MATERIAL

The types of collagen disease to be discussed herein include periarteritis nodosa, generalized lupus erythematosus, dermatomyositis, and scleroderma. Only brief mention will be made of the two more common entities, rheumatic fever and rheumatoid arthritis.

The cases studied were obtained by a review of the files in the x-ray departments and the record rooms at the San Francisco Hospital and the Stanford University Hospital.† The period covered is approximately 15 years, a majority of the cases having been indexed in the last 10 years.

Periarteritis Nodosa (Polyarteritis)

Periarteritis nodosa is frequently and more correctly called polyarteritis as there is actually a widespread *poly-* rather than *peri*arteritis, affecting chiefly the medium-sized and smaller arteries of the body. Pathologically there is a degeneration of the collagenous tissue in the walls of the vessels, sometimes with necrosis of the media, rupture of the elastic lamina and infiltration of inflammatory cells and eosinophils into all the vascular layers. When this infiltration of the arterial coats is localized, or is followed by local fibrosis, or the development of small aneurysmal dilatations, nodular changes develop (giving rise to the term *nodosa*).

Clinically the signs and symptoms are determined more by the distribution of the involved arteries than by the disease process itself. Almost any clinical condition may be mimicked. However, a polysystemic involvement with chronic fever, leukocytosis, eosinophilia and secondary anemia suggests the condition, and is an indication for skin and muscle biopsy.

Radiologically, findings may or may not be present, depending on which systems happen to be involved, and also on the acuteness and degree of involvement. Cardiac enlargement and/or pericardial effusion occurs. The respiratory system may show massive symmetrical or non-symmetrical edema in severe acute cases. In others, small hazy shadows or non-confluent patches of edema (pulmonary hives) may be scattered throughout the lung fields, usually peripherally and at the bases.[1] Some observers[5, 17] have reported cases in which the nodulation was most pronounced centrally. In addition

†The authors are indebted to Dr. H. S. Kaplan for permission to review the latter.



Figure 1.—Periarteritis nodosa. Acute pericardial and bilateral pleural effusions developed during a chronic illness of two years. Biopsy positive. The patient was a white woman 26 years of age with arthralgia, myalgia, fever and gangrene of tips of fingers and toes. *A.* Chest film negative; pericardial friction rub present. *B.* Pericardial and bilateral pleural effusions. *C.* Improvement; also improved clinically, under cortisone therapy.

to the nodular densities, the pulmonary linear markings may be accentuated, particularly the hilar and basal ones. Pleural effusion, secondary to pneumonitis or pulmonary infarction, is reportedly not uncommon.

X-ray examination of the abdomen is frequently requested since abdominal pain is one of the commonest early symptoms. A triad of myositis, abdominal pain and loss of weight has been referred to by some investigators. The abdominal films usually show either no abnormality or some collections of gas suggesting paralytic obstruction (so-called adynamic ileus). Very rarely, there may be a perforated ulcer, intestinal infarction or pancreatic necrosis. In one of the cases in the present study there were both intraperitoneal and retroperitoneal bleeding due to ruptured aneurysm of a small mesenteric vessel, secondary to "healed" arteritis. Hypertension was present, the blood pressure 200 mm. of mercury systolic and 140 mm. diastolic. The patient also had multiple duodenal ulcers.

Renal lesions are the commonest of all the systemic lesions, being present in 80 per cent of the cases.[13] Occasionally hypertension or hematuria may be so prominent that intravenous pyelograms are requested. These usually show either normal or decreased function.

The records of 29 cases of periarteritis nodosa were reviewed. In 28 of these, films of the chest were available and disclosed the findings shown in Table 1. It is to be noted that in some cases there was more than one abnormality observed (for example, pericardial, pleural and pulmonary lesions).

In one case, in which -ray films had shown cardiac enlargement, pulmonary congestion and pleural effusion, both polyarteritis and rheumatic heart disease (mitral and aortic stenosis with insufficiency) were noted at autopsy.

None of the x-ray findings noted in Table 1 are

TABLE 1.—*Observations in x-ray films of chest in 28 cases of periarteritis*

No evidence of disease		9
Evidence of disease		19
*Cardiac enlargement	4	
Pericardial effusion	4	
Pleural effusion	4	
Pulmonary changes	14	
Parenchymal nodules, patches, etc.	4	
Pulmonary congestion, passive	6	
Accentuated markings, ? arteritis	3	
Pulmonary edema, massive	1	

*In some of the cases in which "cardiac" enlargement was observed there may also have been some pericardial effusion.

diagnostic *per se* of periarteris nodosa, but the presence of pulmonary, pleural or cardiopericardial changes in a patient with involvement of other systems should cause one to bear the possibility of a collagen disease in mind.

In the 29 cases, adequate radiological records of systems other than the cardiorespiratory were limited. In two cases, hepatomegaly and in two cases splenomegaly were noted by physicians in the Department of Radiology. X-ray evidence of mild paralytic ileus was noted in one case, and in three there was peptic ulcer (one gastric and two duodenal). No cases of gross renal enlargement were recorded, but in one case poor function was shown by excretory urography. No bone changes were noted; in three patients there was x-ray evidence of articular disease (synovial thickening in two and rheumatoid arthritis in one). Biopsy or necropsy material compatible with the diagnosis of periarteritis nodosa was available in 17 out of the 29 cases. In seven cases biopsy reports were negative for periarteritis nodosa but the clinical evidence was outstanding and two of the patients died apparently of the disease.*

*Most of the histopathological studies referred to in connection with the cases reported in this paper were made by members of the staff of the Department of Pathology, Stanford University School of Medicine. In a few instances material was reported upon by members of the University of California staff at the San Francisco Hospital, to whom the authors are indebted.

The following are illustrative cases:

¶ A 26-year-old white woman with migratory pains in the joints, low-grade fever, myalgia and patchy gangrene of some of the fingers and toes was known to have had periarteritis nodosa for two years. Upon radiographic examination of the chest no abnormality was noted. Reexamination two and one-half weeks later showed small bilateral pleural effusions and pericardial effusion. A month later, after cortisone therapy, clinical and radiographic improvement was present. In this case there was acute development of pleural and pericardial lesions during the course of a chronic, multiple-system disease. Biopsy of skin and muscle was positive for periarteritis nodosa.

¶ The patient, a 63-year-old man, had had fainting spells of unknown cause for a few weeks, and pain and stiffness of the shoulders and knees since a fall one month before admittance to hospital. Initial x-rays of the chest showed only slight left ventricular enlargement. Two days later, films showed bilateral pleural effusion and pulmonary congestion. Clinically the patient had become acutely ill, with high fever (up to 103.1 degrees F.), but there was no evidence of cardiac failure. X-ray examination four weeks later showed clearing of the congestion and effusions, but the patient was failing generally. Abnormalities then were noted in the urine (the so-called telescopic sediment) and the possibility of "visceral angiitis" was considered. The patient recovered partially and was discharged. Biopsy of skin and muscle was reported negative.

¶ A 34-year-old white woman had had asthma for one year and numbness of the left leg and pain in the left foot for six months. She was found to have splenomegaly, eosinophilia and a renal lesion, with casts and cells. X-ray films of the chest showed pulmonary nodulation, fibrosis and emphysema. Biopsy of skin and muscle was reported negative. Pronounced clinical and radiological improvement occurred within three days after cortisone was started. The patient was discharged improved.

¶ A white longshoreman 45 years of age entered the hospital with chilliness, fever (101 degrees F.), mild cough, pain in the chest and dyspnea. He had dermatitis of two years' duration on the leg, with local ulceration. Pain in the right upper quadrant of the abdomen, pronounced enlargement of the liver and massive hematuria developed. The blood pressure was 180 mm. of mercury systolic and 80 mm. diastolic. The urea content of the blood was 27 mg. per 100 cc. The number of leukocytes was within normal limits. X-ray films showed clouding of the right upper lobe and of the left midlung field, interpreted as pulmonary edema. Moderate splenomegaly was noted on an abdominal film. Nine days after admittance the patient was clinically and radiologically improved. Biopsy was not performed. A year later, no abnormality was noted in an x-ray film of the chest.

¶ The patient was a 40-year-old white man with clinical diagnosis of rheumatoid arthritis. X-ray films showed cardiomegaly, predominantly left ventricular, and bilateral pleural effusion. The patient died shortly after examination, apparently from cardiac failure. Autopsy showed:

A. Diffuse collagen disease with
 1. Polyserositis (peritoneal, pleural and pericardial fluid)
 2. Rheumatic heart disease (aortic valve stenosis)
 3. "Wire-looping" of renal glomeruli (as in lupus erythematosus)
 4. Rheumatoid arthritis
 5. Periarteritis nodosa (of pulmonary, thyroid and testicular arteries)

B. Pulmonary emphysema (and fibrosis)

C. Generalized arteriosclerosis (coronary, aortic and renal).

In this case there was a combination of four types of "collagen" disease—periarteritis nodosa, lupus erythematosus, rheumatoid arthritis and rheumatic carditis.

Disseminated Lupus Erythematosus

Disseminated lupus erythematosus, or systemic lupus erythematosus, is a disease most commonly seen in women, and in the ages of 20 to 40. It is characterized by a cutaneous eruption, most often in the form of discoid lesions—with a butterfly distribution over the nose and cheeks—along with varying degrees of visceral manifestation, notably in kidneys, heart, spleen and lungs. The skin lesion is frequently photosensitive, being made worse by sunlight or ultraviolet light or such light-sensitizing drugs as the sulfonamides. Patients may have fatigue, arthralgia and fever. The laboratory findings include leukopenia, accelerated sedimentation rate, "telescopic" urinary sediment and the presence of so-called lupus erythematosus cells.[9] These cells, found only in this disease, are seen in various preparations of blood and bone marrow and are reportedly large leukocytes containing phagocytosed material resulting from lysis of the nuclei of other leukocytes.

Pathologically, there is predominant involvement of the smaller arteries and arterioles. Polyserositis is common, with pericardial lesions the most frequent. In the heart itself, lesions predominate in the valvular structures and the mural endocardium. The kidneys, when involved, tend to be enlarged. The glomerular vessels show the so-called "wire-loop" appearance due to eosinophilic thickening of the vascular loops within the glomeruli. Occasionally the renal changes resemble those of glomerulonephritis or periarteritis nodosa. Periarterial fibrosis may be seen microscopically in at least half of the cases. The lymph nodes are said also to be frequently involved, showing "free hematoxylin-staining bodies."[11]

Radiologically, abnormalities may be noted in the urinary and respiratory tracts. When a patient with hypertension has unusually large kidneys, the possibility of disseminated lupus erythematosus rather than a chronic glomerular nephritis must be considered. Patients with the latter condition tend to have small or contracted kidneys. Pulmonary involvement is remarkable for its frequency and its atypical course. Rakov and Taylor[16] and Foldes[6] described chronic interstitial pneumonitis which leads to atelectasis (due to interstitial edema and inflammation resulting in obliteration of some alveoli)—termed atelectasizing pneumonitis. These lesions are regarded as different from the ordinary pyogenic and fibrinous types of bronchopneumonia which so frequently complicate the terminal stages of lupus erythematosus.

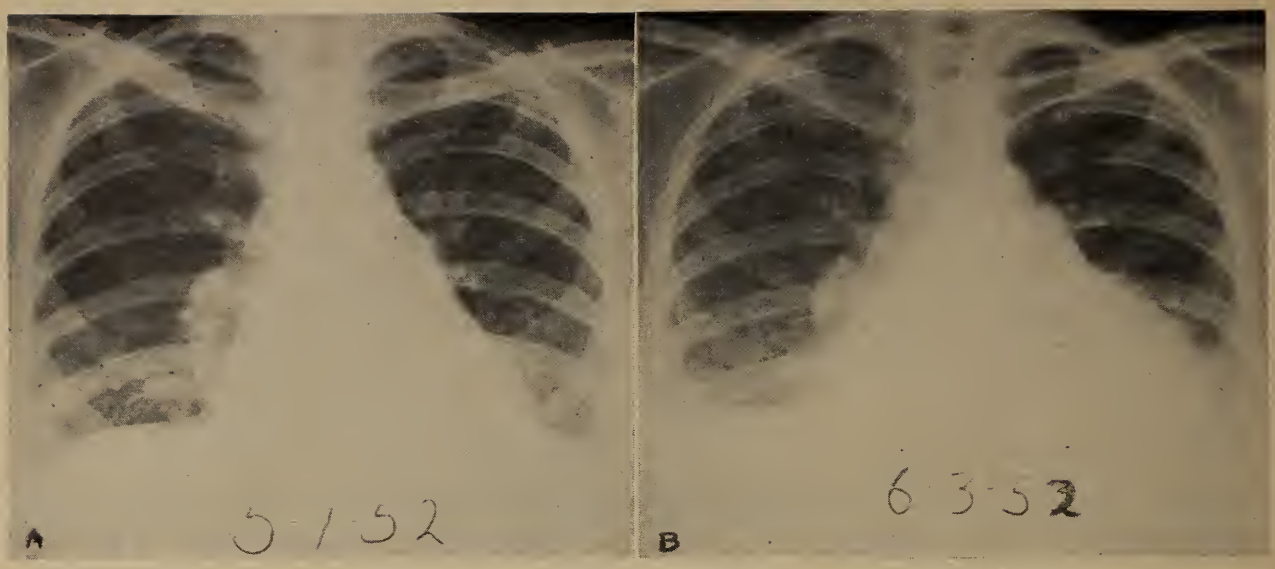


Figure 2.—Disseminated lupus erythematosus, showing right basal nodular densities, with pleural and pericardial effusions. The patient was a 25-year-old white woman. Peripheral arthritis, hematuria, fever and pericardial friction rub, three days. *A.* Small nodular densities, right base, small bilateral pleural effusions, enlarged heart-vessel shadow. *B.* Right basal nodulations obscured or not present; effusions increased. Discharged unimproved.

Thorell[20] reviewed the x-ray films in 15 cases of disseminated lupus erythematosus and found that in eight cases there were pleural or pulmonary parenchymal changes, or both. The pleural effusions were generally small; the pleural thickening more or less irregular. These pleural changes varied in extent in relatively short periods. The parenchymal changes consisted of small areas or patches of increased density, mostly subpleural, especially in early and moderately advanced cases. Thorell used different oblique projections to bring out the subpleural location of the lesions. He expressed the opinion that a combination of pleural and subpleural change ought to lead to the correct diagnosis even if the changes in themselves were not characteristic.

In the series herein reviewed, pleural and pericardial effusions were the commonest findings in lupus erythematosus. The pulmonary parenchymal changes varied from localized accentuated markings, nodules and patches, to extensive edema.

The records of 35 cases of lupus erythematosus, in 32 of which chest films were available, were reviewed (Table 2).

As far as anatomic sites other than those mentioned in Table 2 are concerned, radiological findings were limited. In one case hepatomegaly was reported; in two cases, ascites was noted. No gastrointestinal lesions were detected. In one case, slight osteoporosis of the hands was noted. While there was clinical evidence of joint disorder in many cases, there were no reports of roentgen studies of the joints (largely because examination was not regarded as necessary by the ward physician).

Biopsy or necropsy material compatible with the diagnosis of disseminated lupus erythematosus was available in 24 out of the 35 cases. In two cases biopsy reports were negative.

TABLE 2.—*Observations in x-ray films of the chest in 32 cases of disseminated lupus erythematosus*

No evidence of disease		11
Evidence of disease		21
Cardiac enlargement	5	
Pericardial effusion	5	
Pleural effusion	13	
Pulmonary changes	10*	

*The pulmonary changes consisted of accentuated basal bronchovascular markings in two instances, of nodular or patchy pulmonary densities (possibly edema) in six instances, and of diffuse pulmonary density (edema) in two instances.

The following are illustrative case reports:

¶ A white girl 19 years of age had facial rash of butterfly shape, fever, pain in the joints of six months' duration, and generalized edema (nephrotic syndrome?) of four weeks' duration. X-ray films of the chest showed a small amount of fluid in the costophrenic sulci. (This minimal, bilateral effusion, without other roentgen evidence of chest disease, is one of the more suggestive findings of disseminated lupus erythematosus—in patients with concomitant clinical symptoms.) Biopsy was not performed.

¶ A 13-year-old boy entered the hospital with high fever and weakness, splenomegaly and lymphadenopathy of two months' duration and a butterfly facial rash that had been present a month. Slightly accentuated pulmonary markings were noted in x-ray films of the chest. Three days later films taken at bedside showed bilateral pneumonitis, and six days later the patient died. At autopsy disseminated lupus erythematosus was observed, and also bilateral atypical lobar pneumonia with features suggesting the anaphylactic pneumonia reported by Rich[18] as occurring in rheumatic fever and in patients with sulfonamide sensitivity.

¶ A 25-year-old housewife had peripheral arthritis with migratory pain in the joints. An episode of hematuria had occurred a month before admittance to hospital, and fever and a pericardial friction rub had been present for three days. X-ray films showed some small nodular densities in

the right lower lung field, small bilateral pleural effusions and cardiac enlargement. No abnormality was noted in an intravenous pyelogram. Biopsy was not performed.

Polysystemic manifestations such as were noted in this case (articular, renal, pericardial, pulmonary), plus the small bilateral pleural effusions, are highly suggestive of a collagen disease. Cases such as the present one, in which there is no development of skin lesions during the course of disseminated lupus erythematosus, are few. In a few others the skin lesions may appear only fleetingly.

¶ A 15-year-old girl had painful, swollen joints and fever. X-ray films of the chest showed a "water-bottle" shaped heart suggesting pericardial effusion (this was confirmed by fluoroscopy). Minimal bilateral pleural effusion also was noted. Examination 18 days later showed a pronounced decrease in the size of the heart; the pleural effusions were unchanged. The clinical diagnosis was disseminated lupus erythematosus. Biopsy was not performed.

¶ The patient was a 36-year-old white man with a history of chorea at age 12. Two and one-half years before admittance to hospital, a butterfly rash developed, then hematuria and fever, weakness and fatigue. Some ten months before the x-ray and autopsy examinations reported herein were carried out, the patient was hospitalized and disseminated lupus erythematosus was diagnosed. The blood pressure at that time was 170 mm. of mercury systolic and 96 mm. diastolic. After several months, pronounced orthopnea and minimal edema developed and the blood pressure varied from 160 mm. of mercury systolic and 90 mm. diastolic to 200 mm. and 110 mm. respectively. The patient died of cardiac failure. X-ray films taken ten days before death showed cardiac enlargement. At autopsy chronic glomerular nephritis (without evidence of disseminated lupus erythematosus) and lesions of the spleen consistent with disseminated lupus erythematosus were noted. There was microscopic evidence of active rheumatic lesions. In this case there was a combination of "collagen" diseases.

Dermatomyositis

Dermatomyositis, the rarest of the collagen diseases, is characterized by non-suppurative inflammation of the skin, the subcutaneous tisssues and the skeletal muscle. There also may be inflammatory changes in the vessels, the myocardium and the muscles of deglutition. Little is known of the radiological features. In the present series there was only one autopsy-proven case, and in that case cloudy swelling of the myocardium and congestive failure was noted at necropsy. X-ray films of the chest taken a year before death showed the heart slightly larger than normal, but several weeks before death the heart-vessel shadow was normal in size. The lungs were clear.

Scleroderma

Scleroderma is a polysystemic disease, with fairly well known roentgen findings. Large series of cases have been reported in the literature, one of the most comprehensive, from the radiological viewpoint, being that by Pugh.[15] Table 3, prepared from data in the literature and the authors' observations, is believed to summarize the more important radiological changes in this disease.

TABLE 3.—*Summary of the radiological findings in scleroderma*

A. Gastrointestinal Tract
 1. Esophagus
 a. Loss of peristalsis due to rigidity
 b. Variable degrees of dilatation
 c. Occasional narrowing of distal esophagus
 d. Occasional shortening of esophagus
 2. Stomach
 a. Peristalsis may be decreased
 b. Hiatus hernia may develop
 3. Small Bowel
 a. Peristalsis decreased or absent
 b. Widening, especially of duodenum and jejunum; this may be segmental
 4. Colon
 a. Peristalsis decreased
 b. Segmental narrowing

B. Lungs
 1. Diffuse or localized fibrosis
 2. Diffuse or localized nodulation
 3. Subpleural "cystic disease" (basal)
 4. Calcification (calcinosis)

C. Heart
 1. Decreased amplitude of excursion
 2. Heart may be small, normal or large

D. Phalanges
 1. Absorption of distal phalanges in advanced cases
 2. Occasional increased density of phalanges
 3. Occasional synostosis, distal and middle phalanges

E. Soft Tissues
 1. Calcinosis—fairly frequent and often accompanies phalangeal absorption
 a. Varies from "sand" to plaques
 b. Usually in pressure areas: fingertips, elbows, ischial tuberosities
 c. Usually seen only where there is cutaneous sclerosis.

F. Teeth
 1. Uniform widening of the periodontal spaces (reported in 7 per cent of cases)

Roentgen studies carried out in 10 microscopically proven cases of scleroderma were reviewed. In five of them there was roentgenographic evidence of some degree of small bowel abnormality. In one case, the first suggestion of scleroderma was made by one of the authors upon examination of a film of the small bowel. It is the authors' impression that the small bowel involvement often starts as a dilatation of the third portion of the duodenum, and then progresses distally. In one case, however, the changes in the bowel appeared to start with areas of narrowing. Three of the five patients with scleroderma involving the small bowel died.

One of the ten patients with proven scleroderma had pulmonary disease:

¶ A Chinese man 75 years of age had loss of weight from 150 to 116 pounds, pronounced weakness, dyspnea, edema at the ankles and a cough productive of white, frothy phlegm. The skin of the face and fingers appeared drawn, tense and shiny. The patient died of ruptured diverticulitis of the midascending colon eight days after treatment with corticotropin was started. X-ray films of the chest five months before death showed minimal prominence of the lower lobe pulmonary markings and slight cardiac enlarge-



Figure 3.—Scleroderma, with cystic disease of the lung bases. The patient, a Negro woman 30 years of age, had had scleroderma for twelve years. *A.* Mottled radiolucencies (? cysts) in lung bases. *B.* Lateral view of same. *C.* Detail view of cystic appearance. *D.* Tuft absorption and calcinosis.

ment. Examination three days before corticotropin therapy was begun showed hazy widening of the pulmonary markings throughout both lung fields, with a few areas of small (2 to 3 mm.) hazy nodules along the course of these markings. The changes were more evident in the right upper lobe, where one patchy density (1.5 x 3 cm.) also was present. The left costophrenic sulcus was blunted by fluid.

Among several clinically diagnosed cases of scleroderma was one in which there were subpleural cystic changes. The patient was a Negro woman 30 years of age with definite scleroderma for 12 years. X-ray films of the chest showed a peculiar "spongy" appearance in the bases of the lungs, presumably due to cystic changes as described by Getzowa[7] in two cases. Getzowa considered the changes examples of "cystic and compact pulmonary sclerosis." The "cysts" varied from pinhead size up to 1.5 cm. in diameter. In only one of the two cases was there concomitant extensive fibrosis. The cystlike changes were believed to be due to a disappearance of alveolar tissue in the lung secondary to lysis of the alveolar walls and progressive sclerosis. This sclerosis is reportedly on the basis of "a hyaline process involving the alveolar walls, accompanied by the disappearance of capillaries, superimposed on a generalized, diffuse simple fibrosis of the alveolar walls."

Reports of other cases illustrative of features of scleroderma follow:

¶ A white woman, 42 years of age, was admitted to hospital with a history of attacks of abdominal pain, nausea, vomiting and diarrhea for about 18 months. She had had peripheral vascular changes of the Raynaud's disease type for two years. About eleven months before entry she had had cholecystectomy; chronic cholecystitis was reported.

X-ray examination revealed widening and delay in the third portion of the duodenum and proximal small bowel. Fluoroscopically, the esophagus showed sluggish passage of the barium. No abnormalities were noted in x-ray films



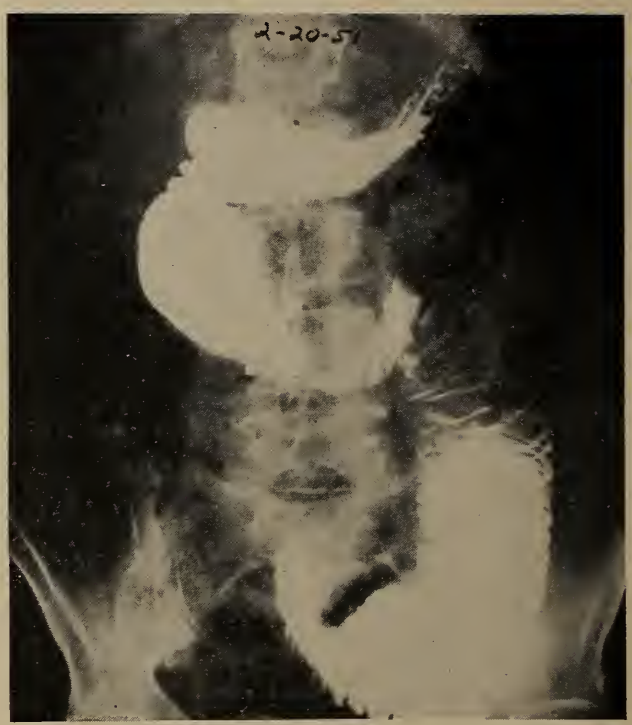


Figure 4.—Scleroderma, with involvement of small bowel. The patient was a 42-year-old white woman. Raynaud's phenomenon had been present two years. There had been attacks of abdominal pain, nausea, vomiting and diarrhea for one and one-half years. Autopsy, six months after examination, showed generalized scleroderma. X-rays showed upper small bowel dilation and delay.

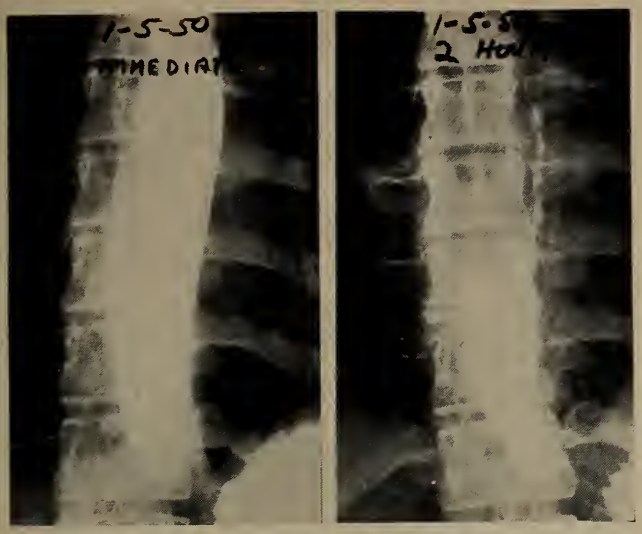


Figure 5.—Scleroderma, with esophageal involvement. The patient was a white woman 36 years of age with onset of disease three years previously, and with recent nausea, anorexia and dysphagia. Biopsy of skin showed scleroderma. X-ray examination showed esophageal widening, decreased peristalsis and pronounced delay.

of the chest and hands. Six months later the patient died "from asthenia," and at autopsy generalized scleroderma was observed.

¶ A 36-year-old white woman had sclerodermal symptoms for three years, starting as pain and stiffness in the extremities, followed by Raynaud's phenomenon. About one month before admittance to hospital, nausea, anorexia and dysphagia occurred. X-ray examination showed esophageal involvement, with widening, decreased peristalsis and pronounced delay in emptying. A biopsy of skin showed changes interpreted as scleroderma. When the patient was observed two and one-half years later, only slow progression of the disease was shown.

¶ A 46-year-old Greek woman had the onset of scleroderma 15 years before admittance to hospital and dysphagia had been present for twelve years. X-ray examination showed esophageal and duodenal involvement, with widening and delay in each site. Calcinosis was noted in the soft tissues of the fingertips and prepatellar areas. Changes noted in skin biopsy were interpreted as scleroderma. The general health of the patient three years later was relatively good.

Rheumatic Fever and Rheumatoid Arthritis

Acute rheumatic fever is regarded as a collagenous degeneration which localizes selectively in the heart. The changes may be found in many other organs, as shown by the arthritic, dermal, serosal, intestinal and pulmonary manifestations of the disease. In the acute fulminating form of the disease, pulmonary complications are reportedly found in as high as 50 per cent of cases.[8] "Rheumatic pneumonitis" has no specific diagnostic features in our experience. Pericarditis is not uncommon. The involved joints tend to show only articular and periarticular swelling.

Rheumatoid arthritis is frequently complicated by myositis, neuritis and arteritis, as demonstrated in 70 per cent of muscle biopsies by Traut and Campoine.[21] Traut also stated that the biopsies showed aggregates of lymphocytes, epithelioid cells and plasma cells somewhat similar to those in dermatomyositis, lupus erythematosus and scleroderma. Pericarditis is the only unusually frequent cardiac complication, being especially common in juvenile rheumatoid arthritis (Still's disease). In addition, pneumonitis and pleuritis may occur along with the inflammatory reaction in the joints, but is rare. The x-ray findings in the bones and joints of patients with rheumatoid arthritis are well known.

DISCUSSION

Collagen diseases constitute an interesting group of disorders from the clinical side because of diagnostic and therapeutic challenge, from the pathological viewpoint because of recent interest in the intercellular substances, and from the radiological viewpoint because of their widespread but unfortunately non-specific nature. The latter is particularly true of the pulmonary manifestations of the collagen diseases. The authors feel that diagnostic possibilities, slim though they are, are enhanced by an awareness of these conditions, plus a knowledge that the patient has a polysystemic disease. It is desirable that radiologists, as clinicians, be able occasionally to suggest the consideration of one of these diseases, on logical grounds, and be cognizant of the further studies, clinical, laboratory or pathological, required to confirm the diagnosis.*

From a review of radiological findings in the present series, the authors have come to believe that pulmonary changes occur more frequently in periarteritis nodosa and disseminated lupus erythematosus than one would gather from the literature. Further, a survey of the histories of over 75 patients with established or clinically diagnosed collagen disease led to the distinct impression that peptic ulcers occur with relatively greater frequency in persons with these conditions than in other patients in hospitals in general.

In studying a patient for possible collagen disease it is desirable that particular attention be paid to the following structures: The skin and muscles, the heart and pericardium, the lungs and pleura, the abdomen and intestinal tract, the kidneys, and the bones and joints.

The skin and muscles may show microscopic evidence of involvement in any of the four types of collagen disease herein discussed—periarteritis nodosa, disseminated lupus erythematosus, dermatomyositis and scleroderma. Histopathologic changes are reportedly fairly decisive in all except dermatomyositis, about which not enough is yet known; they are

*At the same time, it is believed that the term "collagen" disease is one of high abstraction, to be modified or abandoned as soon as advances in knowledge of the cause and of the fundamental nature of these conditions permit.

said to be most clear-cut in periarteritis, but there is divergence of opinion as to the clarity of changes in scleroderma.

The cardiac and pleuropulmonary changes are legion and non-specific. Pericardial effusion, cardiac enlargement, pleural effusion, pulmonary nodular changes and variable degrees of pulmonary edema or fibrosis may occur. These changes may be reversible.

Abdominal distention, with paralytic obstruction, may occur in periarteritis nodosa and disseminated lupus erythematosus, as also may renal enlargement.

The intestinal tract changes are most conspicuous in scleroderma, notably in the esophagus and small bowel (variable degrees of rigidity, dilation and narrowing occur in about 50 per cent of cases).

The articular and osseous changes occur in periarteritis, lupus and especially scleroderma. Radiologically, they are characteristic only in the latter condition. Calcinosis is also confined largely to this disorder.

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Swallowed Foreign Bodies

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• *Of 98 swallowed foreign bodies demonstrated, 71 with fate definitely known are reported. Seventeen of 20 foreign bodies in the esophagus had esophagoscopic removal. Only two of 51 foreign bodies in the gastrointestinal tract had laparotomy, while 49 were spontaneously passed.*

Early esophagoscopic removal of foreign bodies lodged in the esophagus and conservative management of foreign bodies which have passed the esophagogastric junction are recommended. Laparotomy is rarely indicated in the management of swallowed foreign bodies, although various observers are not in full agreement as to the circumstances in which "watchful waiting" is advisable nor as to how long it is permissible to wait for spontaneous passage.

In 20 of 71 cases of swallowed foreign bodies, the objects were in the esophagus at the time the patient was first examined. Esophagoscopic removal was carried out in 17 cases. In two cases a foreign body was passed per rectum and in one was vomited. Laparotomy for removal was done in only two of the 51 cases in which the foreign body was already in the stomach or bowel at the time of examination, and in one of them the operation probably could have been avoided.

IN MOST CASES a swallowed foreign body gets by the esophagogastric junction and is passed spontaneously by rectum, but if it lodges in the esophagus early esophagoscopic removal usually is necessary.

Since the Los Angeles County Harbor General Hospital has an active emergency receiving service and draws from a fairly representative surrounding community, it was felt that the cases of swallowed foreign bodies that were encountered there might be fairly representative of those likely to be seen by the average practitioner. In a period of three and a half years 195 patients with complaint of having swallowed a foreign body were observed there, and in 98 instances the presence of a foreign body was unequivocally demonstrated either radiographically or by recovery in the stool or by esophagoscopic operation. However, information is complete in only 71 of the cases and the present report therefore is limited to that group.

The foreign bodies swallowed showed considerable variation in size and shape. There were about as many dull objects as there were sharp (Table 1).

The ages of the patients ranged from 2 months to 85 years. Twelve were under one year of age, but more than half were in the 1- to 4-year group. Bone fragments were more common in the elderly patients, particularly in those who wore false teeth (see Table 2).

FOREIGN BODIES IN THE ESOPHAGUS

Twenty of the 71 foreign bodies were lodged in the esophagus. Seventeen of the 20—6 bony fragments, 2 open safety-pins, 7 coins, 1 ring and 1 chunk of meat—were removed at esophagoscopy after periods of from 1 to 72 hours. Of the 3 foreign bodies not removed at esophagoscopy, one, a large hairpin in the cervical esophagus, was spontaneously vomited and the other two were passed by rectum. One, the end of a toy horn, was lodged in the distal esophagus for several hours and then spontaneously passed in the stool the next day. The other, a penny, was apparently pushed into the stomach at esophagoscopy and then passed uneventfully (see Table 3).

Foreign bodies lodged in the esophagus may be of serious consequence. They may occasionally pass spontaneously into the stomach or rarely be vomited. But as a rule if the foreign body is shown in roentgen examination to be lodged high in the esophagus, early esophagoscopy is indicated. If it is low in the esophagus haste is not imperative, although watchful waiting should generally not be extended beyond 24 hours. The longer the delay the greater the likelihood of increasing edema with consequent greater difficulty in removal at esophagoscopy.

In the pharynx and esophagus flat foreign bodies such as coins become lodged so that they are seen *en face* in frontal projections, and on edge in lateral projections (see Figure 1). The reverse is generally true when such objects are lodged in the trachea.

FOREIGN BODIES IN THE GASTROINTESTINAL TRACT

Of the 51 foreign bodies that had gotten by the esophagogastric junction all but three passed spon-

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TABLE 1.—*Types of foreign bodies*

Dull		Sharp	
Coins	25	Bones (fish and fowl)	10
Metal tipped eraser	1	Nail	8
Metal nut	3	Bobby pin	5
Marble	2	Straight pin	5
Bolt	2	Tack	7
Clothes-pin spring	1	Glass	2
Extracted tooth	1	Hairpin	2
Gold tooth filling	2	Open safety-pin	4
Hair barrette	1	Screw	1
Metal cylinder	1	Corsage pin	1
Paper clip	1	Needle point	1
Metal whistle	1	Phonograph needle	2
Clock winding key	1	Steel shaving	1
Suspender clip	1		
Closed safety-pin	2	Total	49
Metal knob	1		
Metal rivet	1		
Metal button	1		
Ring	1		
Meat chunk	1		
Total	50		

TABLE 2.—*Age of patient and type of swallowed object*

Age	Dull Objects: Coins	Dull Objects: Other	Sharp Objects: Bones	Sharp Objects: Other	Total: No.	Total: Pct.
Under 1 year	5	3		4	12	12
1 to 4 years	18	17	1	18	54	55
5 to 9 years	2	1	1	7	11	11
10 to 14 years				4	4	4
15 to 85 years		4	8	6	18	18
Total cases	25	25	10	39	99	100

TABLE 3.—*Delivery of swallowed objects from esophagus*

	Dull Objects: Coins	Dull Objects: Other	Sharp Objects: Bones	Sharp Objects: Other	Total: No	Total: Pct.
Passed per rectum	1	1			2	10
Removed by esophagoscope	7	2	6	2	17	85
Vomited				1	1	5
Total cases	8	3	6	3	20	100

TABLE 4.—*Delivery of swallowed objects from gastrointestinal tract*

	Dull Objects: Coins	Dull Objects: Other	Sharp Objects: Bones	Sharp Objects: Other	Total: No	Total: Pct.
Spontaneously passed per rectum	10	13		25	48	94
Removed by laparotomy				2	2	4
Removed from rectum by manipulation			1		1	2
Total cases	10	13	1	27	51	100

taneously. One of the three that did not, a chicken bone, lodged in the rectum and manual removal was necessary. In the other two instances laparotomy was carried out. The objects spontaneously passed were 18 coins, 3 bone fragments, 7 nails, 5 bobby-pins, 5 straight pins, 2 open safety-pins, 1 6 cm. corsage pin, and several assorted metallic and plastic objects (see Table 4).

Following are reports of the two cases in which laparotomy was done:

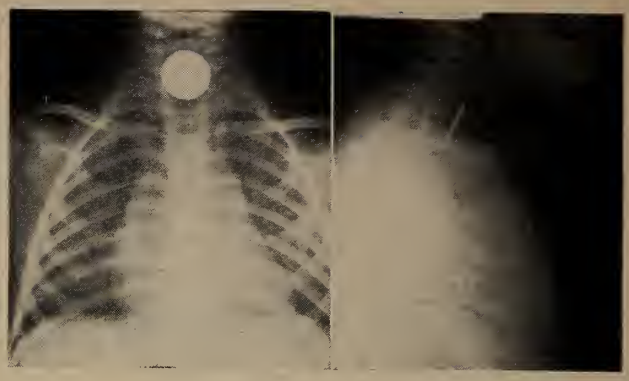


Figure 1.—Coin lodged in the cervical esophagus.



Figure 2.—Two safety-pins in the distal ileum, stationary about 10 hours. They were closed through the wall of the bowel at laparotomy (the operation probably need not have been done), and subsequently passed.

Case 1. A 26-year-old white woman "accidentally" swallowed three open safety-pins. One lodged in the cervical esophagus and was removed at esophagoscopy about 16 hours after ingestion. The other two reached the region of the ileocecal valve. There, appearing to interlock (Figure 2) they remained stationary for about 10 hours. Although there were no untoward symptoms, laparotomy was done. The pins were found freely movable in the terminal ileum. They were closed through the intestinal wall and "milked" to the hepatic flexure. The bowel was not opened. The pins were passed per rectum. The patient was subsequently returned to the hospital on several occasions for attempted suicide.

In retrospect it seems that laparotomy was probably not indicated at that time and could have been delayed for at least an additional 48 hours of conservative management and several weeks if necessary.

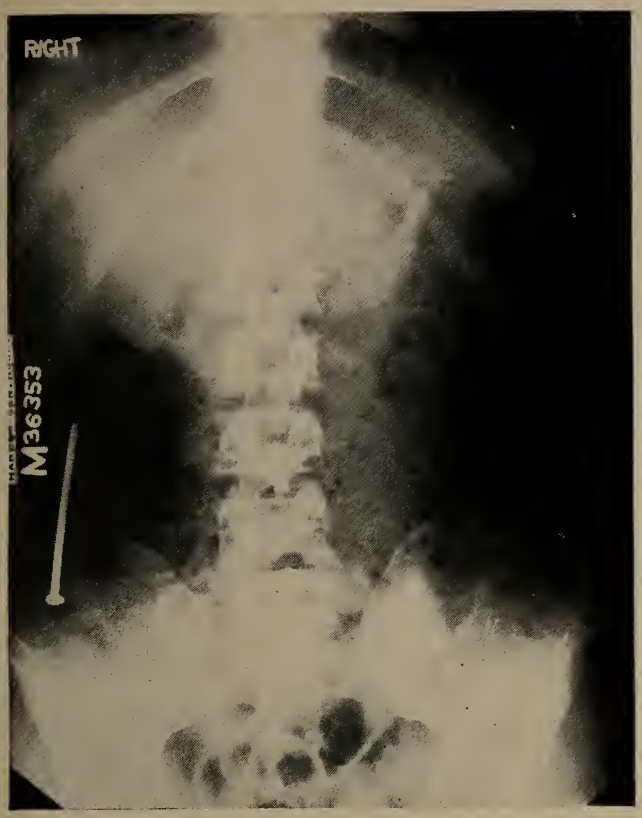


Figure 3.—A 9 cm. tenpenny nail perforating the cecum. It was removed at laparotomy four years after ingestion.

Case 2. A 26-year-old white man was admitted to hospital with symptoms consistent with acute appendicitis. However, in a plain film of the abdomen a 9 cm. tenpenny nail was seen in the right lower quadrant. Upon questioning, the patient admitted swallowing the nail four years previously, just before going to prison, in order that he might have a weapon while incarcerated. Although the nail was not passed as expected, it caused no symptoms until the present illness. Upon operation, the nail was found to be perforating the lateral wall of the cecum and lying in the lateral gutter with the point cephalad. Only the head of the nail was still intraluminal. The appendix appeared normal. The postoperative course was uneventful and the patient was discharged ten days after operation.

In this, the only case in the series in which laparotomy was definitely indicated for removal of a foreign body from the gastrointestinal tract, there were no serious consequences directly attributable to the long delay.

Foreign bodies that have entered the stomach will as a rule pass uneventfully through the gastrointestinal tract. It may take longer for large and pointed objects to pass, but rarely is laparotomy necessary.

DISCUSSION

While there are differences of opinion as to the amount of "watchful waiting" that is indicated in dealing with swallowed foreign bodies, most observers agree that conservative management is in order. Best[2] stated: "As a rule, those who have had the greatest experience in the management of such cases advocate careful observation and non-surgical treatment, while those with only an isolated experience tend to favor surgical interference."

The initial roentgen examination to establish whether a foreign body is present generally consists of three films, although fewer may suffice. These are a lateral view of the neck, a lateral view of the chest and an anteroposterior view of the abdomen. If these views do not reveal a foreign body and the history suggests that it may not be radiopaque, the lateral films of the neck and chest should be repeated after a swallow of thick barium. The barium shadow may give evidence of an obstruction or the material may adhere to a relatively radiolucent object and thus render it visible. If a foreign body is not demonstrated by these simple means, fluoroscopy with the swallowing of barium-soaked cotton pledgets or barium capsules may be effective, but as a rule, in the authors' experience, these additional procedures are disappointing. Careful barium study of the gastrointestinal tract may occasionally reveal an otherwise overlooked radiolucent foreign body that lies below the esophagogastric junction.

Brown[3] described in detail the roentgen findings in cases of esophageal foreign bodies, particularly those in which they are lodged in the cervical esophagus. He was of the opinion that if the width of the retrotracheal space exceeds that of the trachea or vertebral bodies the presence of a foreign body should be suspected even in the absence of a radiopaque shadow.

The authors agree with Grekin and Musselman[11] that prompt action is indicated if a foreign body is above the cricopharyngeal ring when first observed, for at that level it can be relatively easily removed through an esophagoscope, whereas with delay it may become lodged farther down the esophagus and be more difficult to remove. Should the foreign body be below the cricopharyngeal ring, a few hours of observation may be permissible in the hope that it will enter the stomach; but if it does not progress in 12 to 24 hours, esophagoscopic removal is urgently indicated. Further delay only results in increasing edema and firmer impaction, and necrosis and perforation become more likely.

Esophagoscopy may be advisable if symptoms persist for more than a day, even though a foreign body is not roentgenographically visible, for it may be that the symptoms are caused by a radiolucent object.

When a foreign body lies below the esophagogastric junction, watchful waiting is proper. Taking a single plain film of the abdomen daily for the first few days and then every other day if progression is slow but definite, will usually suffice. A regular diet

without excessive roughage is advisable. Catharsis is contraindicated.

Observers differ as to how long a foreign body may remain stationary before surgical intervention is justified. Chambers,[6] who reported upon 16 cases in prison inmates who were sent to the hospital because of intentional swallowing of foreign bodies, said: "In general, six weeks may be taken as a rough guide to the period a foreign body which is producing no symptoms may be left in situ." Grekin and Musselman,[11] who reported upon 59 cases, placed the period at four weeks. Woodburn,[15] in a report on 50 cases in children, expressed the opinion that if a foreign body, particularly if sharp, remains at one level for more than five days, operation should be done; and Best[2] who reported on 12 cases in which sharp-pointed foreign bodies were deliberately swallowed in a disciplinary center, felt that laparotomy should be carried out if a sharp object is arrested at site for more than 48 hours.

The size and shape of a foreign body of course must influence estimates of the likelihood of passage, and hence the indications for laparotomy. However, it is generally agreed that signs of perforation, obstruction or hemorrhage are indications for immediate operation. Although large, pointed or jagged foreign bodies do not always cause perforation, in most cases in which perforation does occur the foreign body is of that kind.

McManus,[12] in a review of reports of 93 cases in which perforation occurred, noted that in 45 per cent of cases the foreign bodies were pins, bits of wire and similar objects, in 45 per cent bones, and in 10 per cent toothpicks and wood splinters. The perforations were in the lower ileal and cecal regions in 63 per cent of cases, and in one third of cases the perforation was at the appendix.

Perforation occurred in only one case in the present series (reported in a preceding paragraph) and in other cases such objects as open safety-pins, hairpins and a 6 cm. corsage pin (Figure 4) were passed uneventfully, the latter in two days.

Exner[8] demonstrated the remarkable ability of the intestine to protect itself against perforation. He introduced sharply pointed objects, point first, into the intestinal tract of animals. Almost invariably these objects were expelled with their points trailing rather than leading. To learn by what mechanism the reversal was brought about, Exner gently pricked the intestinal mucosa of animals with sharply pointed objects and noted that an area of ischemia with a large central concavity developed at the site. Thus, pricking the bowel wall increases the lumen of the bowel at the point of contact, permitting freer progress to the offending object.

It is probable that in many cases swallowed foreign bodies pass through the gastrointestinal tract without causing symptoms and a physician is not consulted. In one case in the present series, that of a 2-year-old child, a small metal cylinder was incidentally noted in the gastrointestinal tract on films taken because it was thought the patient might have a fracture of the lumbar spine. The foreign body was uneventfully passed within two days.



Figure 4.—A 6 cm. corsage pin swallowed by a 5-year-old. Passed spontaneously.

2737 Via Anita, Palos Verdes Estates.

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Progressive Muscular Dystrophy

A Preliminary Report on Treatment with Amino Acids, Folic Acid and Vitamins

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• *Ten patients with progressive muscular dystrophy were given daily oral doses of amino acids, folic acid and selected vitamins.*

At the time of this report they had been treated by this means for periods varying from two months to one year. Only one had other therapy concurrently.

Definite and progressive improvement, objective and subjective, occurred in all cases. Among objective changes noted—not all of them in all cases—were return of strength, increase in size and tonus of atrophic muscles, restoration of normal respiratory action and relief of depression. Patients reported a sense of well-being, increase in strength and a feeling of bodily warmth.

TEN CONSECUTIVE unselected patients with progressive muscular dystrophy were given amino acids, folic acid and selected vitamins on the assumption that the wasting process in the muscle is secondary either to failure of the digestive system to split the protein molecule into the basic amino acids or to a disorder of the enzymatic system for the synthesis of muscle tissue.

The patients, six females and four males ranging in age from 6 to 51 years, were first examined in the outpatient neurological clinic of the University of California School of Medicine, San Francisco, and were then admitted to hospital for diagnostic procedures including muscle biopsy, creatine and creatinine studies, determination of muscle strength and, in some cases, electromyographic examination. All had progressive muscular dystrophy.

The three classical types of muscular dystrophy —Erb's juvenile, fascioscapulohumoral, and pseudohypertrophic—were represented. Some of the patients had had various forms of therapy previously without arrest of progression.

Each patient was given daily:

† Vitamin B_{12} 50.0 micrograms
Folic acid 3.34 mg.

and a proprietary protein hydrolysate* mixture that, in the amounts given, contained approximately:

Amino acid produced by enzymatic digest of casein	16.0 gm.
Ascorbic acid	100.0 mg.
Thiamine hydrochloride	10.0 mg.
Riboflavin	6.0 mg.
Pyridoxine hydrochloride	1.0 mg.
Calcium pantothenate	1.0 mg.
Niacinamide	50.0 mg.
Vitamin A	5,000 USP units
Vitamin D	500 USP units
Iron peptonate	0.1 gm.
Tribasic calcium phosphate	1.0 gm.

Directions were given to take one heaping teaspoonful of the protein hydrolysate mixture, mixed with liquids or solid food, with meals three times a day. One capsule of B_{12} and folic acid was taken morning and evening.

The patients were requested to make no change in their mode of living. With one exception, none received any other therapy concomitantly. Each patient kept a written, chronological record of any changes in physical status and of reactions to the regimen. Suggestions of any kind that could influence the patient were strictly avoided.

At the time of this report the patients had been treated by this means for periods varying from two months to one year. Definite and progressive improvement, objective and subjective, occurred in all cases. All the patients gained strength. In some cases atrophic muscles that had minimal contractility and no measurable function before treatment, developed power and returned to approximately normal size.

Common subjective reactions were reported as follows: A few days after starting treatment, patients experienced a sense of generalized warmth. Previously they had always felt cold. Some patients thought they had fever, but normal temperature prevailed. A sense of well-being usually developed concomitantly. After about ten days of treatment, many had a feeling of "fullness" in the head, and some described it as a continuous dull throbbing headache. This lasted from a few days to approximately

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†Rubrafolin capsules (folic acid and vitamin B_{12}) were supplied by E. R. Squibb and Sons, New York.

*Walker's Protein Hydrolysate with vitamins and minerals was supplied by the Walker Laboratories, Inc., of Mount Vernon, N. Y.

two weeks and did not recur. Some reported muscular cramping especially in the gastrocnemius and in intrinsic muscles of the feet. This surprised them, for they had not had muscle cramps since weakness had first developed. Within three weeks to one month after the beginning of treatment a subjective sense of well-being increased and strength developed. All the patients were cheerful and gained confidence. Relatives and friends reported them to be less irritable. The improvement continued after the first month and was manifest in the ability to carry out more activity progressively with less fatigue.

CASE REPORTS

Case 1: A woman 32 years of age had had onset of muscular dystrophy at about age 12. The muscles of facial expression were so weak that the eyes could not be closed; the mouth appeared as the typical straight line; the nasolabial folds had disappeared. Hypoventilation had resulted in a chronic cough. The patient could not raise her arms to arrange her hair, was unable to rise from a chair, and when reclining could not get up without "climbing up on herself" or using nearby objects for aid. She could not climb stairs. There was bilateral wrist drop and foot-drop on the right. The patient considered herself a complete invalid.

After treatment for one year there was complete restoration of function of the facial muscles and the chronic cough had disappeared. The patient could raise her arms with good strength (the right arm was limited, owing to winged scapula, but function was constantly improving). The strength in the forearms was normal. Foot-drop was not present and the formerly atrophic muscles were of good tonus, firm to palpation, and showing strength. The patient performed all the household duties—laundry, ironing and cooking—for a family of four and said she did not tire except on occasions of extreme and prolonged exertion. She could stand with arms extended and could flex the knees to a complete squat and then rise without assistance. She ran up a flight of stairs at the clinic.

Case 2: The patient, a 29-year-old woman, had onset of muscular dystrophy when 13 years of age. Three sisters also had the disease, of the Erb type. The patient walked with typical gait, had exaggerated lumbar lordosis, and was unable to raise her arms above the horizontal plane. She climbed stairs with great effort, leading always with the same foot, and only if assisted or holding a hand rail. She could not lift objects by flexing her forearm. There was pronounced wasting of the gluteal muscles. The patient was depressed.

After 11 months of treatment the lumbar lordosis was less pronounced and the gait was improved. The muscles of the thigh were increased in size, were of good tonus and strength, and were firm to palpation. The patient could lift objects with flexion of the forearm and was able to care for her hair. She climbed stairs unassisted (although using the hand rail) and stepped with each leg alternately. She was cheerful and optimistic.

Case 3: A man 51 years of age who had had muscular dystrophy for 13 years had weakness and moderate atrophy of shoulder muscles and chronic cough owing to weakness of the muscles of respiration. He became fatigued quickly on walking.

After four months of treatment, respiration was improved, coughing diminished and muscular strength increased. The patient remained critical of the treatment, but said he was able to be more active and that he tired less quickly.

Case 4: The patient, a 39-year-old man (a brother of the patient in Case 1) had muscular dystrophy of the fascioscapulohumoral type. Onset had occurred when he was about 14 years of age. He could not rise from a supine or from a normal sitting position without assistance. The gait was fair if he was supported by someone. The patient could not raise his arms or extend his hands from the wrists. Chronic cough was present owing to weakness of the muscles of respiration.

Four months after beginning of treatment, pronounced increase in strength was noted. The hypothenar muscles were increased in size and strength. The patient could extend his hands upon the wrists. Without assistance he rose from a supine position and put his legs over the side of the bed. He could breathe deeply.

The patient reported a sense of bodily warmth and returning strength: "If I were as strong as I feel, I'd be able to do anything. I have a feeling for the first time since my illness began that I am getting better."

Case 5: A woman 24 years of age with muscular dystrophy of Erb's type that had begun some 15 years previously, had weakness and atrophy of the muscles of the shoulder girdles. She could not rise from a chair without using her arms, and was unable to flex her forearms when carrying small objects. Climbing stairs she used the hand rail, rose always from the same foot and paused after each step to prepare for the next.

After two months of treatment she walked up seven steps with six-inch risers, rising from the right and left legs alternately and not using a hand rail. After four months she was able to rise from a chair with minimal use of her arms and could lift several dishes at a time with flexion of the forearm. She carried a quart thermos bottle of coffee, holding it upright in her hand, for several hundred feet without fatigue. Previously she could carry the bottle only by grasping it at the top and allowing her arm to hang at her side.

Case 6: The patient, a six-year-old boy, had typically pseudohypertrophic muscular dystrophy. Onset had occurred at about age 3 and the disease was progressive. There was history of the disease in other members of the family. The patient walked with awkward gait, fell frequently, and could not stoop to pick up objects. He could be held in the forward flexed position by the pressure of one of the examiner's fingers.

After two months of therapy, strength and function were considerably improved. His mother reported: "I went to the playground to call him home. Ordinarily I could pick him out of the group as his walk was so typical, and he always trailed the group in any activity. On this occasion I did not see him, so I called his name. A youngster started running toward me, and I did not recognize my son until he came close and spoke to me. He was running and playing as normally as the other children."

The patient could rise from the prone position without the use of his hands. Considerable pressure was needed to hold him in the forward flexed position.

At last report he was able to use roller skates.

Case 7: A sister of the patient in Case 6, eight years of age, had muscular dystrophy of pseudohypertrophic type that had begun at age 5. Her handicaps were of the same nature as her brother's but of lesser degree. She could not play active games.

After two months of treatment she carried on a full and

active program of play. The gait appeared normal, and the patient could rise from the sitting or lying position without using her hands. She could use roller skates.

CASE 8: A woman 33 years of age had muscular dystrophy of the Erb's type that had begun at about the age of 20 and for the preceding year had progressed rapidly. She could not rise from a chair, step up on a curb or board a bus without assistance. She became fatigued very rapidly and was depressed and tearful.

After treatment for two months she reported that she had climbed four steps in a normal manner, could walk well on the street, and could step up on a curb or board a bus unassisted. She was cheerful and optimistic.

CASE 9: The patient, a boy nine years of age, with muscular dystrophy of the pseudohypertrophic type, walked with a gait typical of the disease and was unable to rise from a lying or sitting posture without "climbing on himself" or on nearby objects. Signs of the disease had been present at birth. The patient was receiving physical therapy and rehabilitation therapy but the progression of weakness was not abated.

A severe attack of asthma interrupted treatment during the first month and it was begun again when the asthma subsided. During the second month of treatment (the previous program of physical therapy and rehabilitation exercise being continued concurrently) asthma did not recur, and the patient became stronger and performed movements more rapidly.

One of the exercises required of the patient in the rehabilitation therapy was to rise from a supine position on an inclined plane to a sitting position. Before therapy with amino acids, folic acid and vitamins was begun he could rise only if the plane was raised to a 22-degree slant. After two months of therapy he was able to rise from a 10-degree slant. He was able to be more active with less fatigue.

CASE 10: A woman 42 years of age had muscular dystrophy of Erb's type that had begun about 20 years previously and for the most recent three years had progressed rapidly. Following an upper respiratory tract infection in January 1953, she had remained totally incapacitated. She was unable to turn over in bed unassisted. When she was propped in a sitting position, if inadvertently her head was hyperextended on the cervical spine beyond the center of gravity, it would fall backward and the patient was unable to return it to an upright position unassisted. She had little use of her hands and no useful function in her arms. Her legs were so weak she could not stand.

After four months of therapy she could move readily in bed unassisted, could move her head freely in all directions and could bend her neck back and forth to the extremes of flexion and extension without feeling weakness or fatigue. Able to use a fork, she could feed herself while in a sitting position. At last report she could sit up without being propped and was able to stand unsupported for a few moments.

Veratrum Viride

Hypotensive and Cardiac Effects of Intravenous Use

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• The hypotensive action of veratrum viride given intravenously was studied in 24 patients, 22 of them hypertensive and 2 normotensive. Vasodepression of considerable but variable degree was obtained in all patients. Maximum hypotension occurred 8 to 15 minutes after injection and relative hypotension usually lasted at least two hours.

In four patients subnormal hypotension occurred but there were no clinical manifestations of shock. The blood pressure rose promptly when pressor drugs were administered.

A dose of 0.3 to 0.5 mg. brought about a satisfactory decrease in blood pressure. The degree of decrease was affected by the speed of administration and in a few patients by idiosyncratic sensitivity to the drug.

Veratrum has an extravagal action on the pulse rate, and in that and other respects resembles digitalis. Veratrum should be given with caution to digitalized patients.

Atropine reduced but did not abolish the hypotensive effect of veratrum, and was more effective when given before veratrum. This indicates that the parasympathomimetic action of veratrum is important in the mechanism of blood pressure reduction.

RECENT CLINICAL and experimental studies have renewed interest in the use of the veratrum alkaloids in the treatment of hypertension. Until a few years ago this drug was used chiefly by obstetricians in the management of eclampsia to reduce blood pressure.[5] The physiologic actions of the drug, however, were poorly known. Recent observations by Freis and co-workers[9] showed that the drug acts primarily as a vasodilator, as indicated by relatively normal flow of blood through major vascular circuits (notably the renal, hepatoportal, and muscular areas) in the presence of reduced systolic and diastolic systemic blood pressure. The peripheral vasodilation typically followed rather than accompanied the initial hypotensive action of the veratrum alkaloids, which suggested decreased total peripheral resistance.

Sympathetic vasoconstrictor reflexes are not blocked by veratrum, since vasopressor overshoots are intact and postural hypotension usually does not occur. In addition, pressor drugs such as epinephrine reverse the vasodepression produced by a mixture of veratrum viride. The oral preparations have also been reported to reverse the strain pattern in the electrocardiogram and to lower the blood pressure in hypertension.[10] McNair and co-workers[15] and Barrow and Sikes,[3] however, were not able to confirm the hypotensive effect in ambulatory patients.

The concept of vagal reflex vasodepression from veratrum is based on experimental evidence. Von Bezold and Hirt[4] and Jarisch and Richter[12] observed vasodepression and bradycardia which was abolished by sectioning the vagi; this is termed the Bezold effect. Jarisch and Richter[12] and Richter and Amann[17] further suggested that the major afferent arc of this reflex originated in the myocardium and was carried by the vagus nerve. Evidence for this was obtained by the demonstration of active afferent fibers in the cardiac branches of the vagus nerve.[1, 13] By pharmacologic methods Dawes[7] showed that the receptor area for this reflex in cats and dogs was in the left ventricle.

The efferent pathways for the Bezold reflex are incompletely known. Krayer and Acheson[14] showed in cross transfusion experiments that the peripheral vasodilation associated with the decrease in blood pressure is of neurogenic origin rather than a direct action of the drug on the arterioles. Recently Meilman and Krayer[16] noted in man that significant hypotension resulted from the intravenous administration of two of the veratrum alkaloids (protoveratrine and veratridine).

The present report is upon results of investigation of the effects of the intravenous injection of a veratrum preparation on hypertension.

PATIENTS AND MATERIALS

When this investigation was begun, the purified alkaloids of veratrum were not available; hence Veratrone® was used. It is an alcoholic solution of

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the mixed alkaloids of veratrum viride, each cubic centimeter containing 2.5 mg. of the alkaloids. The dose of Veratrone to be used was measured with a tuberculin syringe, diluted with physiological saline solution to 1.0 cc., and given intravenously in 2 to 3 minutes.

Twenty-four patients from 29 to 66 years of age were selected for study. All but three were men and most of them had a history of essential hypertension of at least five years' duration. Twenty-one patients had blood pressure of more than 150 mm. of mercury systolic and 100 mm. diastolic, one had blood pressure of 150 mm. and 90 mm. respectively, with a previously established diagnosis of chronic essential hypertension, and two patients were normotensive.

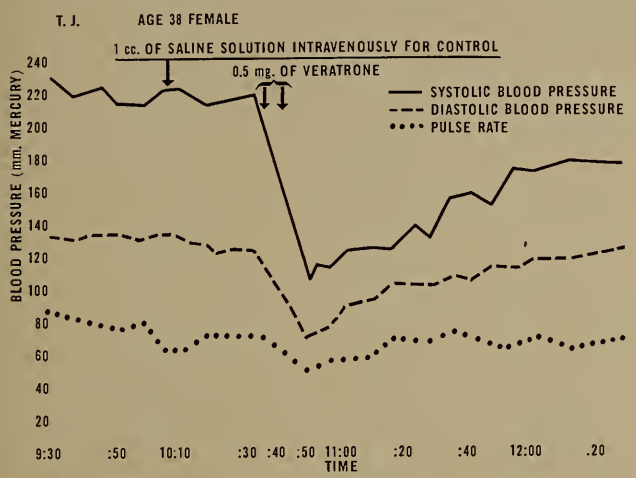


Chart 1.—Typical effect on blood pressure and pulse rate of intravenous adminstration of 0.5 mg. of Veratrone.

The patients were recumbent during the experiments and were allowed at least 30 minutes of rest for stabilization of their blood pressures before the administration of the drug. The blood pressure determinations were done with a mercury sphygmomanometer. To observe electrocardiographic changes, frequent tracings were made with a Sanborn Visocardiette. In eight of the subjects, a control injection of 1.0 cc. of normal saline solution was given intravenously before the veratrum without effect on the blood pressure or electrocardiogram.

RESULTS

1. *Hypotensive Action*

In 29 experiments on 22 hypertensive and two normotensive patients, injection of veratrum produced a significant drop in blood pressure. The usual response shown in 1 patient is recorded graphically in Chart 1 and in 5 other patients in Chart 2. These 6 patients received only 0.5 mg. of the drug, irrespec-

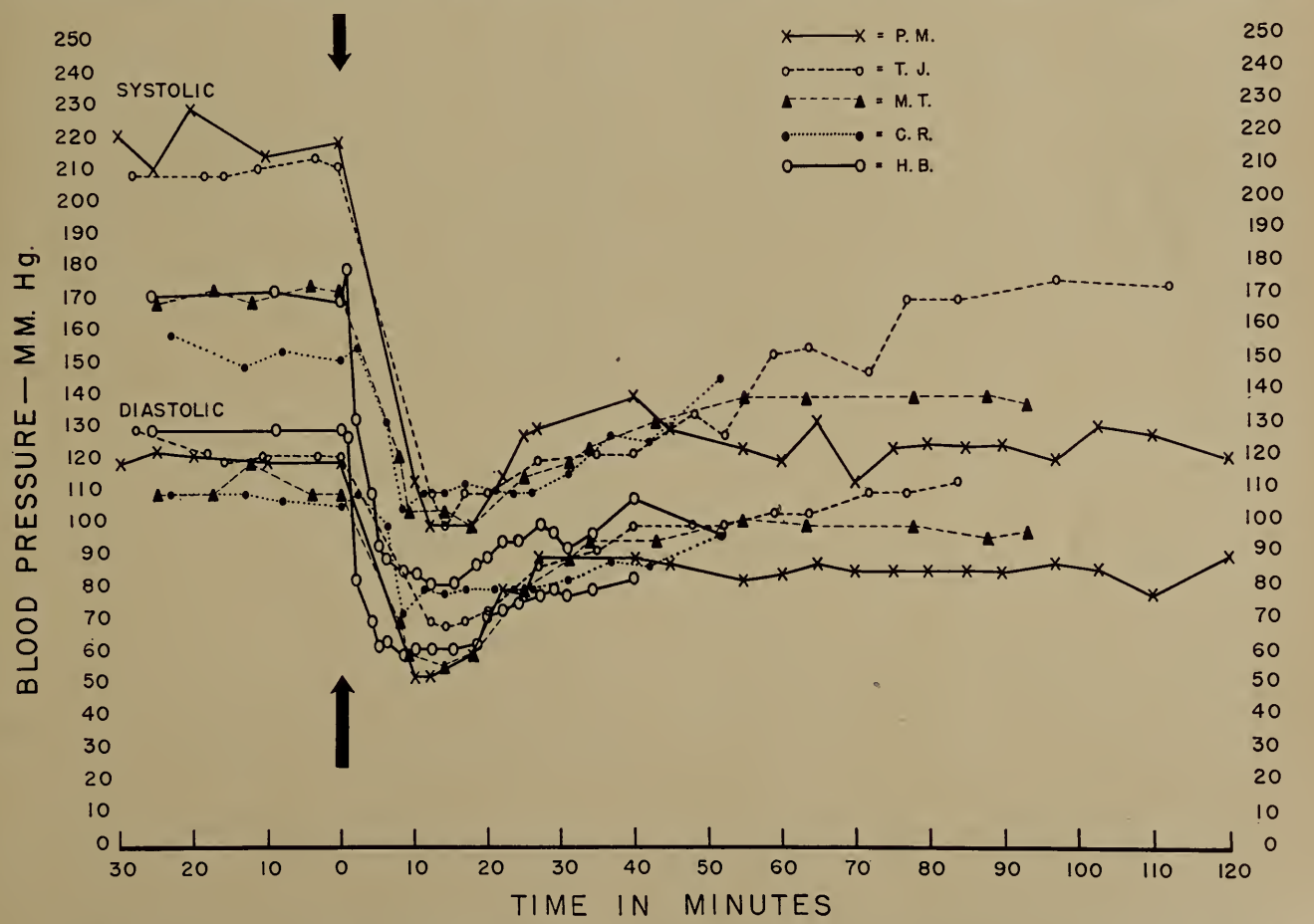


Chart 2.—Magnitude and duration of hypotensive response in five patients following intravenous injection of 0.5 mg. of Veratrone. Discussed in text.

TABLE 1.—*Data on four patients with most pronounced hypotensive response to veratrum viride.*

Case	Age	Before Injection—Blood Pressure (mm. Mercury) systolic/diastolic	Before Injection—Pulse Rate	Veratrum Dose (mg.)	Lowest Blood Pressure	Time (Minutes After Injection)	Pulse	Comment
E.G.	58	211/132	90	0.5	60/50	14	60	Rose to 110/75 19 minutes after vasopressor drug.
D.G.	65	250/170	96	0.75	116/70	12	60	Rose to 150/82 26 minutes after vasopressor drug.
H.B.	32	170/130	84	0.5	85/62	12	56	Rose to 100/78 27 minutes after vasopressor drug.
J.G.	53	150/92	102	0.5	80/50	5	72	Reversed by Neosynephrin

tive of weight and age. Nevertheless, the time, extent, and duration of decreases in blood pressure were similar. The vasodepression occurred rapidly and was usually maximal within 8 to 15 minutes. The range of decrease from the pressure prevailing before the drug was given varied between 18 and 156 mm. of mercury systolic, and between 10 and 110 mm. diastolic. The experiments were terminated in two to three hours, by which time the blood pressure had usually risen to above normotensive but was still below the premedication levels. In 3 patients the blood pressure decreased profoundly after one injection, and in a fourth patient (J.G.) after the second dose. As shown in Table 1, this occurred in 5 to 14 minutes and was most striking in patient E.G. No clinical manifestations of peripheral vascular shock were noted in these 4 patients, who remained alert and calm. Atropine and vasopressor drugs were given, as explained later, to arrest further vasodepression.

Chart 3 illustrates a pronounced response to two doses of Veratrone and then reversal of vasodepression by vasopressor drugs. Following the first injection of 0.5 mg. of Veratrone, the pressure dropped from 150 mm. systolic and 92 mm. diastolic to 106 mm. and 64 mm., and it increased only slightly during the following 45 minutes. Then another similar dose reduced the blood pressure to 80 mm. systolic and 50 mm. diastolic 5 minutes after injection. Neosynephrin® given intravenously promptly elevated the blood pressure to 194 mm. and 120 mm. but did not sustain it. Inasmuch as only 4 of the 22 patients had so pronounced a hypotensive effect, it is reasonable to assume that enhanced sensitivity or cumulative effect had occurred. This suggests the need for careful observation of the blood pressure in all patients for at least 30 minutes following injection of Veratrone.

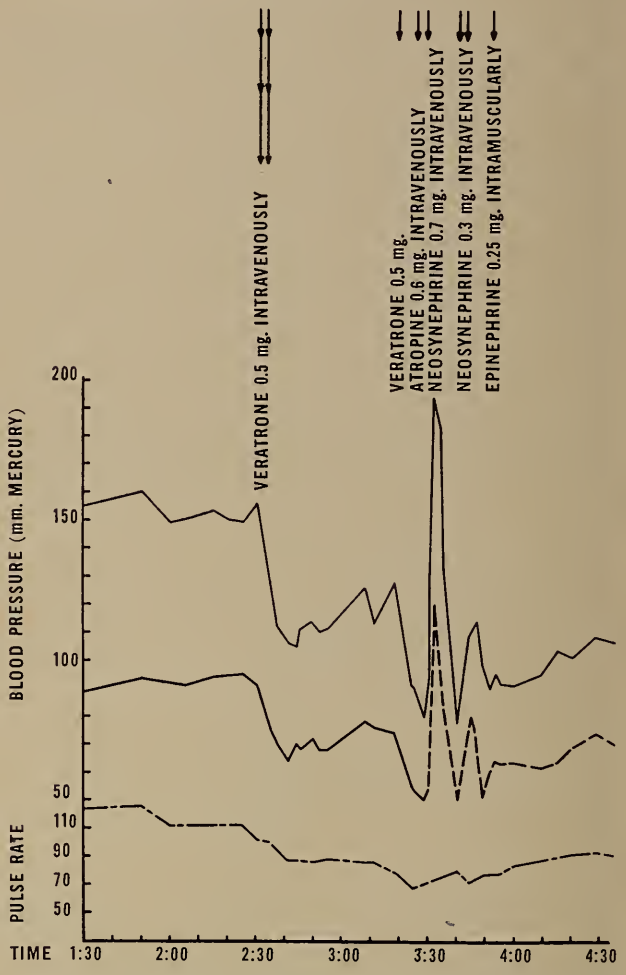


Chart 3.—Pronounced decrease in blood pressure in a patient (J.G.) following 0.5 mg. of Veratrone, and subsequent response to vasopressor drugs. See discussion in text and Table 1.

2. *Effect on the Heart Rate*

The effects on the heart rate are shown in Charts 1, 3, and 4. In all patients there was a decrease in heart rate ranging from 7 to 36 beats per minute. When atropine was administered during the hypotensive phase, the heart rate did not increase significantly.

3. *The Effect of Varying Doses and Intervals Between Injections*

The results indicate that a dose of 0.3 to 0.5 mg. of Veratrone will produce a satisfactory vasodepression in the average patient with essential hypertension and will also cause vasodepression in normotensive persons. The data also demonstrate that both dosage and rapidity of administration have pronounced effect on the hypotensive response. Thus, 0.8 mg. given rapidly in one dose will cause a greater decrease in blood pressure than 1.49 mg. given

TABLE 2.—*Effect of multiple doses of veratrum on the blood pressure.*

Case	Age	Blood Pressure Before Injection (mm. Mercury) systolic/diastolic	—Doses in Milligrams— First	Second	Third	Lowest Blood Pressure After First Dose	Time Between First and Second Dose (Minutes)	Lowest Blood Pressure After Second Dose	Time Between Second and Third Dose (Minutes)	Lowest Blood Pressure After Third Dose
T.F.H.	30	166/116	0.5	0.5		128/88	28	110/74		
J.I.G.	53	152/92	0.5	0.5		106/64	48	80/50		
P.O.G.	39	160/105	0.5	0.3	0.5	134/88	23	134/88	25	134/88
A.L.	66	240/130	0.16	0.16	0.3	240/130	5	240/130	17	112/80
J.H.M.	40	190/120	0.5	0.16		150/102	70	142/100		
F.S.	45	198/140	0.3	0.1	0.3	168/118	30	160/120	18	146/98
L.S.	53	160/102	0.3	0.1	0.3	150/100	20	154/100	21	134/88
R.J.W.	34	150/104	0.5	0.3		134/94	25	125/86		

slowly in divided doses about a half hour apart. When two doses of 0.5 mg. are injected about a half hour apart, usually an additional decrease in blood pressure occurs (see Charts 3 and 4). The data for 8 patients receiving multiple injections is summarized in Table 2. Patient P.O.G. received 3 doses of veratrum (0.5 mg., 0.3 mg. and 0.5 mg.) 23 and 25 minutes apart; a satisfactory decrease in blood pressure occurred after the first dose, but the decrease was not accentuated by the subsequent injections. This was the only patient who did not have further decrease in blood pressure when a second injection was given within 30 minutes of the first.

When the initial dose was small, as in A.L., who received 2 injections of 0.16 mg. each within 5 minutes, there was no vasodepression. In the same patient, another injection of 0.3 mg. decreased the blood pressure to 112 mm. systolic and 80 mm. diastolic from a control level of 240 mm. and 130 mm. When the initial dose was large, smaller doses given later caused only slight additional decrease in blood pressure or none at all (see data on patients J.H.M., F.S. and L.S. in Table 2). In patient L.S. the first and third sub-average doses had a minimal hypotensive effect while the second dose had none. In the case of patient T.F.H. (Table 2, Chart 4) the same dose repeated after a few days resulted in the same, or slightly less, vasodepression. This agrees with observations of Meilman and Krayer.[16]

Although, as might be expected, the greatest decreases in blood pressure occurred in persons with the highest initial pressures, there was not always a parallelism. There was also no correlation between the hypotensive effect obtained and the age or weight of the patient or the duration of the hypertension. The factor most closely related to the decrease in blood pressure was the size of the dose injected, but this effect was influenced also by individual variation in sensitivity to the drug.

TABLE 3.—*Effect of atropine when given before and when given after veratrum injection*

Case	Blood Pressure (mm. of Mercury) Before Medication systolic/diastolic	After Veratrum Followed by Atropine systolic/diastolic	After Veratrum Preceded by Atropine systolic/diastolic	Dose of Atropine
H.B.	172/130	90/68	136/110	1.2 mg.
T.F.H.	184/120	100/60	136/98	1.2 mg.
H.L.S.	190/130	146/82	160/104	1.2 mg.
R.J.W.	146/100	124/84	192/140	0.6 mg.

4. *Effect of Atropine*

It has been established[16] that atropine decreases the vagal stimulating action of veratrum alkaloids, but this has not been sufficiently studied in man. To further examine the mechanism of action of veratrum, atropine (usually in doses of 1.3 mg.) was given intravenously to 2 patients before veratrum was given and to 7 patients after veratrum had been given and hypotension had taken place. The data on 4 patients are summarized in Table 3.

In patient H.L.S., 0.3 mg. of veratrum lowered the blood pressure to 146 mm. systolic and 82 mm. diastolic from 220 mm. and 150 mm. Three weeks later the same patient received two doses of atropine (1.3 mg. each) 20 minutes apart followed by 0.3

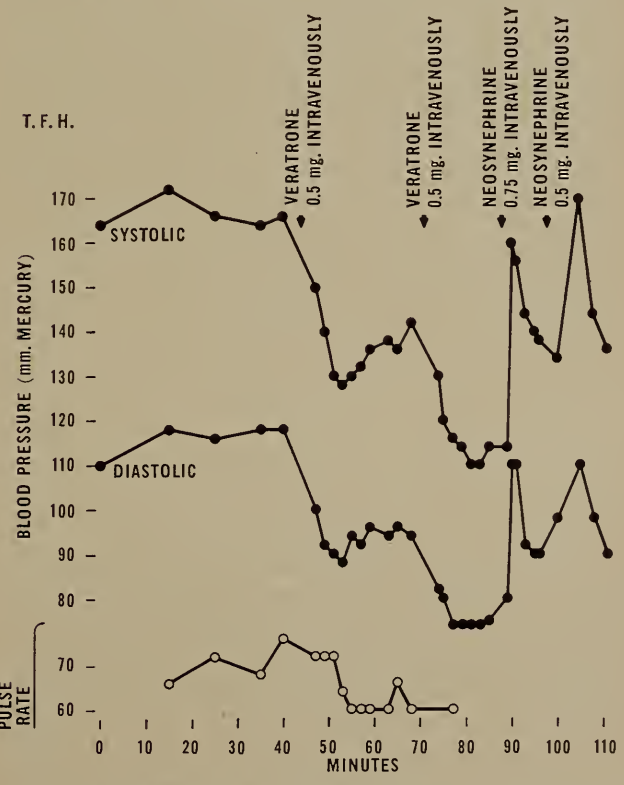


Chart 4.—Effect of two doses of 0.5 mg. (3 minims) of Veratrone and arrest of hypotension by Neosynephrin. Discussed in text.

mg. of veratrum and the blood pressure dropped from 190 mm. systolic and 130 mm. diastolic to 160 mm. and 104 mm. respectively.

When atropine was given during the hypotensive stage it usually arrested further vasodepression. In one patient (R.J.W.) who had blood pressure of 146 mm. of mercury systolic and 100 mm. diastolic and a pulse rate of 72, injection of veratrum in two doses, 0.5 mg. and 0.33 mg., caused a decrease in blood pressure to 124 mm. and 84 mm. and a slowing of the pulse rate to 48. Atropine, 0.6 mg., given intravenously 22 minutes after the last dose of veratrum, accelerated the pulse rate to 115 and elevated the blood pressure to 192 mm. and 140 mm. within eight minutes. This vasopressor response to atropine was exceptional. It probably was the clinical counterpart of the effect of veratrum alkaloids observed in animals, which is considered to be a manifestation of epinephrine release.[14]

These results show that atropine usually reduces but does not abolish the vasodepressor effects of veratrum.

5. *Effects of Vasoconstrictor Drugs*

The effects of vasoconstrictor drugs administered near the time of maximum decrease in blood pressure were studied. Neosynephrine given intravenously in doses of 0.3 to 0.7 mg. was usually employed, but occasionally epinephrine in doses of 0.25 mg. was given intramuscularly. In two experiments ephedrine sulfate (25 mg. intramuscularly and 2.5 mg. intravenously) was injected. All of these drugs reversed the vasodepression from veratrum, differences being only in rapidity and duration of their action.

The typical effects of giving Neosynephrin intravenously are shown in Charts 3 and 4. After veratrum had reduced the blood pressure to 114 mm. of mercury systolic and 75 mm. diastolic (Chart 4) from the average premedication level of 166 mm. and 116 mm., injection of 0.75 mg. of Neosynephrin caused the pressure to rise to 160 mm. and 110 mm. within 2 minutes. Then it decreased to 138 mm. and 90 mm. in 10 minutes. A second dose of 0.5 mg. of Neosynephrin caused a rise to 170 mm. and 110 mm. in 7 minutes. It is interesting to note that 13 minutes after the second dose of Neosynephrin the blood pressure was still at 136 mm. and 90 mm. In Chart 3 is shown comparable pressor response resulting from Neosynephrin, but of greater degree and shorter duration. The effects in these two patients illustrate that vasoconstrictor drugs only temporarily reverse the vasodepression resulting from veratrum.

These experiments demonstrated that veratrum, unlike other hypotensive drugs (hydrogenated ergot alkaloids,[11] for example) does not block the sympathetic vasoconstrictor reflexes. They also showed that vasopressor drugs do not abolish but only temporarily reverse the potent peripheral vasodilating action of veratrum, since the blood pressure returns to relative hypotensive levels after the pressor action has subsided.

6. *Subjective and Objective Symptoms*

Despite the pronounced changes in the blood pressure and in the electrocardiographic tracings when veratrum was administered, severe or disturbing symptoms were rare. The symptoms usually noted were:

a. Tingling, coolness or numbness about the lips, face, tongue and trunk, occasionally extending to the extremities. These phenomena began 2 to 3 minutes after injection and usually before the decrease in blood pressure occurred.

b. A sensation of warmth, usually about the mouth, forehead and chest, but occasionally generalized, was also noted before the hypotension developed.

c. Perspiration, most pronounced on the forehead, was noted at times during the maximum effect of veratrum.

d. At least half of the patients had slight nausea. Two of them had vomiting and retching that was quickly controlled by giving atropine intravenously.

e. Hiccough occurred in one patient but lasted only a few minutes.

f. Mild sensation of substernal pressure was noted by one patient 27 minutes after veratrum was injected. It lasted about 5 minutes. At that time the blood pressure had dropped from 215 mm. of mercury systolic and 132 mm. diastolic to 114 mm. and 74 mm. respectively.

The foregoing manifestations (except for the last two) were roughly proportional to the dose, occurred a few minutes after injection and before the onset of substantial vasodepression, and usually lasted 5 to 15 minutes. These observations are in accord with those of Meilman and Krayer.[16]

DISCUSSION

In the present experiments Veratrone was found to be a potent vasodepressor. Although the degree of change was not the same in all cases, the blood pressure was considerably reduced in all of the patients, hypertensive and normotensive. Subnormal blood pressure (without evidence of shock) was produced in only four patients. This suggests that peripheral resistance had decreased, as was shown by Fries and co-workers.[9] Krayer and Acheson's[14] finding of peripheral neurogenic stimulation indicates that the changes brought about by the veratrum alkaloids probably are owing to peripheral vasodilation

rather than to a generalized toxic circulatory effect. The absence of toxic or irreversible peripheral vasodilation is apparent from the rapid response to vasopressor agents like Neosynephrin. In addition, this finding demonstrates that veratrum does not block sympathetic vasoconstrictor responses (see also Fries and co-workers[9]). The hypotensive action of this drug may be halted (or decreased) by giving atropine intravenously. This is kindred to an observation by Meilman and Krayer[16] that when atropine was given simultaneously with protoveratrine, the decrease in blood pressure was more gradual and of lesser degree than it was when protoveratrine was given alone. The countering action of atropine indicates that vagal stimulation plays a role in the reduction in blood pressure caused by the veratrum alkaloids. Since sympathetic vasoconstrictor reflexes are not blocked and the degree of vasodepression may be arrested in part by atropine, a margin of safety exists in the use of this drug as compared with other agents such as tetraethyl ammonium chloride or dibenamine.

Bradycardia is not essential for the hypotensive result and the two effects do not parallel each other; there may be pronounced hypotension with little slowing of pulse. This is in agreement with observations by Fries and co-workers[9] and by Meilman and Krayer.[16] The bradycardia brought about by veratrum persists even after atropine is given intravenously, which indicates that veratrum has extravagal action on the pulse rate. Veratrum given to digitalized patients further depresses the sino-auricular node and causes auriculoventricular block, as occurred in two of the patients in the present study. Hence, the drug should be given with caution to digitalized patients. Similarity in action between veratrum and digitalis alkaloids was suggested by Fries and co-workers[9] who reported that both caused increased cardiac output and decreased systolic and diastolic pulmonary blood pressure in patients with congestive heart failure. The present findings add further evidence.

The rapidity, degree and duration of the decrease in blood pressure brought about in hypertensive patients by intravenous administration of Veratrone suggest that the drug can be used therapeutically. The disease states most suitable for such therapy would be those in which severe hypertension is the primary cause of the symptoms and may jeopardize the patient's life. Such conditions are eclampsia,[2] acute pulmonary edema or congestive heart failure[9] and severe or protracted headache due to hypertension.[16] Meilman and Krayer[16] reported good response with protoveratrine in a case of severe unremitting headache. The recently reported observation that veratrum decreases the peripheral resistance in the cerebral blood vessels[6] suggests the possible use of this drug in hypertensive encephalopathic conditions. In recent studies of malignant hypertension it was noted that veratrum considerably reduced blood pressure in that condition.[8]

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A Cardiovascular Disease Case Progress Index

A Means of Aiding Research and Supplying Teaching Material

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• The establishment of a Cardiovascular Case Progress Index at the University of California School of Medicine is reported. The need for such an index to increase our knowledge of chronic cardiovascular diseases is discussed. Cases of various disorders of the cardiovascular system seen in a routine way in the hospital or outpatient department are listed in the Index, and their progress followed indefinitely. The organization, operation, and utilization of the Index for teaching and research are briefly discussed.

THE PRESSING NEED for more accurate information on the course and prognosis of chronic disease, particularly as they are affected by the newer medical and surgical therapy, is evident to all who are familiar with the subject. Since the turn of the century the life expectancy of persons in this country has been greatly increased. It is significant that many of the major causes of death and morbidity are now chronic diseases. Clearly, in the years ahead teaching and research in the field of medicine will increasingly emphasize these chronic conditions, particularly those pertaining to the cardiovascular system.

There are few adequate long-range studies of cardiovascular diseases in man. Lack of precise knowledge of the course and progress of these disorders is embarrassing as modern medical and surgical techniques are applied in their treatment. Many good long-range laboratory studies have been made on animals, but it is never certain to what extent the findings apply to human beings unless they can be checked in man himself.

The Cardiovascular Case Progress Index established at the University of California School of Medicine in San Francisco in January 1953 is expected to provide a matrix within which such studies may be carried out in human beings. The Index consists of a list of cases of various disorders of the cardiovascular system observed routinely in the hospital or outpatient department of the school of medicine. It includes a procedure for following the progress of these patients. It is hoped that, in time, a significant number of cases will be made available for teaching and research.

ORGANIZATION OF THE INDEX

The Cardiovascular Case Progress Index was developed by physicians and surgeons on the faculty of the school of medicine. It was formally established under the auspices of an interdepartmental board whose members were interested in various aspects of cardiovascular disease. The board included a pediatrician, cardiovascular surgeon, neurosurgeon, a physician with special interest in the physiology of the circulation, and several cardiologists. From the administrative side, the associate dean of the school of medicine and a representative of the hospital administration were members.

A major problem of the early planning period pertained to diagnosis. At first members of the board believed that it would be possible to select a limited number of cardiovascular diagnoses for the Index, but it soon became evident that agreement on diagnoses to be included would require protracted discussion and careful evaluation. As a compromise, certain categories of disorders of the cardiovascular system were selected. These are listed in the first column of the Registration Sheet (see sample, next page). It was agreed that cases in which the diagnosis fell into one or more of these general categories would be included in the Index. In each case the specific diagnosis is made in the usual manner according to *Standard Nomenclature of Diseases and Operations*, fourth edition, and entered in the appropriate space on the Registration Sheet.

It was recognized that certain associated disorders, diagnostic procedures, and therapeutic procedures as they pertain to each diagnosis might be important in determining groups from which generalizations could later be drawn. Accordingly, members of the board selected the specific items which appear in the second, third, and fourth columns of the Registration Sheet.

From the Cardiovascular Board, the Cancer Research Institute, and the Department of Medicine, University of California School of Medicine, San Francisco.

Supported in part by the Cardiovascular Training Grant (HT-549, C3) from the National Heart Institute, of the National Institutes of Health, Public Health Service, and grants to the Cancer Research Institute.

REGISTRATION SHEET

Clinic or ward.....Hospital service.....

Name of physician registering case.....Date of reg.....

Initial diagnosis (4th ed., Standard Nomenclature).....

.....Std. Nom. No.....

.....

.....

Name of patient.....Unit No.....Sex: M.....F.....

Date of initial diagnosis*.....Age at initial diagnosis..... Race: W.....N.....Other.....

Check frequency of follow-up recommended: 3 months..... 6 months..... annual.....

Check as many of the listed conditions of the cardiovascular system, associated disorders, diagnostic procedures, and therapeutic procedures as apply to this patient.

check	code	Conditions of cardiovascular system
☐	1	Aneurysm
☐	2	Arrhythmia
☐	3	Arteriovenus communication
☐	4	Collagen
☐	5	Congenital
☐	6	Coronary
☐	7	Embolism
☐	8	Hemorrhage
☐	9	Hypertension
☐	10	Neurocirculatory asthenia
☐	11	Occlusion, artery
☐	12	Occlusion, vein
☐	13	Pericardium
☐	14	Pulmonary
☐	15	Renal
☐	16	Rheumatic
☐	17	Subacute bacterial endocarditis
☐	18	Syphilitic
☐	19	Thyroid
☐	20	Vasomotor
☐	21	Unusual pain syndrome
☐	30	Conditions, cause unknown
☐	40	Operation, specify

check	code	Associated disorders
☐	1	Anemia (less than 10 gms. hemoglobin)
☐	2	Atrophy, necrosis or gangrene
		Cardiac functional capacity
☐	3.1	Class I
☐	3.2	Class II
☐	3.3	Class III
☐	3.4	Class IV
☐	4	Cardiac hypertrophy
☐	5	Convulsions
		Coronary insufficiency
☐	6.1	Grade I (angina)
☐	6.2	Grade II (prolonged pain without infarction)
☐	6.3	Grade III (myocardial infarction)
☐	7	Diabetes mellitus
☐	8	Disorders of consciousness
☐	9	Edema
☐	10	Electrolyte disturbance
☐	11	Eye ground changes (KW3 only)
☐	12	Gout
☐	13	Papilledema (include KW4)
☐	14	Polycythemia
☐	15	P.O. bleeding
☐	16	Pregnancy
☐	17	Pregnancy, toxemia of
☐	18	Pulmonary embolism and/or infarction
☐	19	Pyelonephritis
☐	20	Renal insufficiency
☐	21	Rest pain (extremity)

check	code	Diagnostic procedures
☐	1	Angiography
☐	2	Ballistocardiogram
☐	3	Blood volume
☐	4	Cardiac catheterization
☐	5	Cerebral blood flow
☐	6	Nerve block
☐	7	Oxygen saturation
☐	8	Pheochromocytoma
☐	9	Phonocardiogram
☐	10	Pressure pulse recordings
☐	11	Psychiatric evaluation
☐	12	Pulmonary function test
☐	13	Pylogram
☐	14	Radioisotope studies
☐	15	Renal clearance
☐	16	Vasodilatation tests
☐	17	Vectorgram

check	code	Therapeutic procedures
☐	1	Blood and blood substitutes
		Drugs or medications
☐	10	Anticoagulant
☐	11	Autonomic blocking
☐	12	Procaine amide
☐	13	Quinidine
☐	14	Resin
☐	15	Vaso-constrictor
		Operations
☐	20	Heart
☐	21	Homologous graft
☐	22	Great vessels
☐	23	Sympathectomy
☐	24	Sympathetic anesthetization
☐	25	Vessel ligation, intracranial
☐	26	Vessel ligation, extracranial
☐	30	Non-cardiac
		Regulation
☐	40	Lipid
☐	41	Potassium
☐	42	Protein
☐	43	Sodium
☐	44	Other electrolyte

* Record date of patient's first admission (whether teaching or private case) on which the diagnosis of cardiovascular disease was made.

Note: If this patient is included in a special study group (recognized by the cardiovascular board for purposes of this registration) please identify investigation by name:.....

OPERATION OF THE INDEX

The Registration Sheet is completed by the physician in charge of the patient in either the hospital or the outpatient department. The physician is thus responsible for the accuracy of the diagnosis and the other items checked.

All information recorded on the Registration Sheet is transferred by a secretary to a Patient Name Index Card. Much of the information is coded. The patient's name, participation in a social service project, occupation, date of birth, sex, race and address are recorded on the card, together with other identifying data. The diagnosis in terms of *Standard Nomenclature of Diseases and Operations* is posted. The items checked on the Registration Sheet under the headings "Conditions of the cardiovascular system," "Associated disorders," "Diagnostic procedures," and "Therapeutic procedures" are recorded. The Patient Name Index Card includes a summary of all the information on the Registration Sheet.

A separate index is made for each of the following listings: Cardiovascular conditions, Associated disorders, Diagnostic procedures and Therapeutic procedures. Each of these indexes is identical in form, and classification is facilitated by use of topographic and etiologic numbers associated with each item.

A system has been developed to follow the progress of each case until death of the patient from any cause. Patients who are under the care of members of the staff of the school of medicine are reexamined at intervals at the time of their visits to the hospital or to outpatient clinics. If a patient reverts to the care of a private physician, the wishes of that physician are respected regarding further follow-up through the Index. The private physician may choose whether the patient (1) may have follow-up examinations for the Index in the outpatient department, arranged through the physician's office, (2) may be contacted directly by the Index to arrange for follow-up examinations in the outpatient department, (3) is not to be contacted by the Index at all, the physician agreeing to supply the follow-up information himself, or (4) is not to be included in the Index.

UTILIZATION OF THE INDEX

It is anticipated that the Index will have many uses for teaching and clinical research. Through its use, suitable patients for clinical demonstration to students and presentation at seminars may be easily located. Patients in various stages of a given disease or with various complicating conditions can be easily gathered for teaching purposes. In time the course of many chronic cardiovascular disorders, as evidenced by patients followed through the Index, will form the basis for more accurate teaching in this field. The effectiveness of diagnostic and therapeutic procedures can be evaluated for teaching and research.

It is expected that the Index will serve as a matrix for many clinical studies of a research character. It provides an ever-increasing number of carefully followed patients with various disorders of the cardiovascular system and a mechanism for identifying suitable patients for any particular study. Special or detailed studies may be carried out by reference to the patient's hospital and outpatient department record or by examination of the patient himself if this is necessary or desirable.

Finally, a study of the Index itself will yield useful information concerning the completeness and accuracy of diagnosis and registration. Data will be developed and analyzed to describe the population with various cardiovascular disorders included in the Index with reference to such characteristics as age, sex, and occupation. The frequency of diagnostic and therapeutic procedures and the incidence of associated non-cardiovascular disorders may be easily determined for any diagnosis. Special studies relating to hypertensive cardiovascular disease, arteriosclerotic heart disease and incompletely diagnosed conditions are currently being planned.

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The General Practitioner in Industrial Medicine

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• *Most industrial injuries are treated by physicians who have a general practice in addition to their industrial work. Because of the increasing number and seriousness of industrial injuries, better preparation for treatment is required in the patient's interest and for reasonable economy. The trend toward centralization of industrial medical facilities, increasing before and during World War II, has been somewhat reversed; the general practitioner now has an opportunity to take a useful place in the care of injured employees.*

A physician dealing with industrial cases must be prepared to give immediate emergency treatment, to comply with the procedures of insurance carriers, and to refer cases which he is not skilled or equipped to handle. As a personal physician having the confidence of the patient he can secure greater cooperation from all parties concerned in industrial disability and can sometimes promote a more rapid recovery.

Of the more than 500,000 industrial injuries reported by California physicians each year, over 60 per cent are treated by general practitioners. This latter designation includes a large number of physicians and surgeons with a general practice which is more than 50 per cent industrial.

At the time California's present workmen's compensation law was passed, the "family physician" or general practitioner treated practically all injuries, occasionally referring a case of major trauma. Today it is safe to say that most major injuries are treated by specialists or in consultation with them. This change has been brought about by the evolution of medical practice and also by certain developments in industry:

1. Increased amount of industry, with a greater number of accidents.

2. Expansion of those industries which have a higher rate of accidents.

3. Increased mechanization and speed, causing greater severity of accidents despite safety programs.

4. Increased motorization in industry and faster transportation, resulting in a greater number of vehicular accidents.

More definite treatment, demanding special skill and training, was required for the more severe and numerous injuries resulting from these conditions. Facilities beyond those available to the general practitioner are usually mandatory in major injuries.

Industrial insurors were quick to recognize this need as it became necessary for them to set up panels of physicians who they knew were qualified and equipped for industrial practice. In turn, physicians acquiring large industrial practices set up clinics, groups and other organizations which operated economically for the insurors and therefore for employers also. Many general practitioners, however, instead of qualifying themselves and making satisfactory arrangements for such practice, merely disapproved or condemned these developments. At the beginning of World War II, therefore, most industrial practice was being done by industrial groups, plant medical staffs, and even in industrial hospitals, and the medical and surgical service provided was usually good. In some instances the war enhanced these conditions; but after the war, possibly because of the opposition of organized medicine to socialization, there was a greater decentralization of industrial practice.

Nevertheless the average general practitioner, especially if he had had military service, learned from wartime conditions the value of integration, locally and regionally, of the medical profession including all specialties. With the organization of the Academy of General Practice there has developed a real effort at an equitable, honest and realistic solution to the problem of privileges and recognition of general practitioners.

Too many general practitioners formerly—as perhaps a few still do—looked upon insurance cases as an easy and inconspicuous means of enhancing their finances by padding accounts, ordering useless or unnecessary prolonged diathermy and heat treatments without supervision and billing these as physical therapy, and treating conditions for which they lacked experience and training, rather than following the concept, "as a conscientious disciple of Hippocrates, earning a reasonable living, with a security for old age and not expecting or trying to become a wealthy man through the practice of medicine." Too

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often they permitted themselves to become indolent, making no attempt to keep up with medical developments, especially in treating trauma, forgetting much and acquiring nothing to replace it. As more and better trained specialists became available—particularly in the fields of orthopedics and traumatology—employers, insurance carriers, and employees preferred and demanded this specialized service.

With the ever increasing number of accidents, both civilian and occupational, it behooved insurance companies and employers to pay heed to the type of medical service available and rendered. The cost for treatment of all accidents in 1951 was $7,900,000,000 and for that of occupational or industrial accidents was $2,650,000,000.

Can scientific treatment be compatible with compassion? It has been stated that physicians today know more about medicine than they do about patients. The author believes that in this regard the general practitioner has a place in medical and industrial integration, whether it be local, regional, or governmental, including the application of health insurance. He can well be the herald and exponent of good medicine and, at the same time, may be especially useful in psychologically evaluating the patient as a person.

The general practitioner can have a special position in the community of industry because of his intimate knowledge of the home environment and living conditions of the worker. In recent years employers in both large and small plants have taken an increasing interest in the health problems of their employees which extends to their homes. Claim examiners have long known the relation of home conditions to frequency and severity of injury. As was indicated in the discussions of the Annual Congress on Industrial Health, 1953, industrial medical and health organizations are much concerned as to the ability of the general practitioner to extend the scope of his service to the health problems of industry.

In order to render such services, however, a physician must have an office prepared for immediate emergency treatment and must make personnel in his office familiar with the forms and procedures of insurance practice. He must acquaint himself with the problems of his industrial community. He must be able to provide good modern treatment of trauma, either by his own skill and training or by definite arrangements with specialists who he knows can handle the more difficult problems for which the general practitioner is not trained. He must recognize his own limitations in accordance with the Principles of Medical Ethics, bearing in mind the objective of getting injured workers back to the job in the shortest time and with the best physical recovery.

It is not uncommon that an injured employee is seen by more consultants than are needed. They may or may not agree as to the degree of his disability, the nature of the injury and the treatment to be given, but the employee may feel that the insuror or employer is trying to find an excuse to conclude treatment or get him to work before he has fully recovered. Here the general practitioner, especially if he is the employee's personal physician, can be of great value in advising him, and often the period of disability is considerably reduced because of this personal relationship. Here is an opportunity for a real personal physician, or, to use the term of the Alameda-Contra Costa Medical Association, the patient's medical manager.

The personal physician need not fear to lose income by proper and necessary referrals. The specialist should likewise respect the Principles of Medical Ethics by seeing that the patient is returned to the care of the referring physician after the required special service has been rendered, and the insurance carriers also must respect this principle.

It may appear that this procedure involves dual service and cost, but in reality there is no additional expense. The general practitioner is simply receiving his share and recognition of the service rendered. In these times when medicine is striving for better public relations, such an arrangement will further that purpose.

The controversial problem of fee-splitting is pertinent to this discussion. There is a movement in Iowa and in Illinois to revise medical ethics in those states to permit a division of fees between the referring physician and the specialist, and there has been some indication of a similar tendency in New York and in California. This action is here mentioned only to be condemned; such a radical change is not necessary for an equitable fee, or to compensate both the referring physician and the specialist. The American Medical Association and the American College of Surgeons have long condemned fee-splitting.

The general practitioner has a very definite place in the field of industrial medicine and surgery. He cannot expect to participate without adequate training and proper facilities, and he should make known by precept and practice his willingness to call consultation whenever it seems in the best interest of the patient.

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The Cardiovascular System in Acute Infectious Disease

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• *Myocarditis may result from a wide variety of acute infectious diseases, but electrocardiographic abnormalities interpreted as indicating myocarditis may arise from a number of other causes.*

Among the factors which may cause myocarditis are direct invasion by an organism, the toxic products of an organism, hypersensitivity to the products of an organism, drugs used in therapy, deficiency in nutrients, electrolyte imbalance, and, rarely, fever.

Recently emphasis has been placed on the finding that circulatory failure in acute infectious diseases is often primarily peripheral, although heart failure due to myocarditis is not uncommon.

THE TERM "MYOCARDITIS" has been loosely used to denote functional derangement of the myocardium during the course of infectious disease. A number of investigators have made clinical, electrocardiographic and autopsy studies of the heart in a variety of infectious diseases and a high incidence of concomitant "myocarditis" has been reported.[7, 16, 22, 31, 44, 45, 54, 55] The literature contains reports of cardiac abnormalities occurring with diphtheria,[4, 25, 35] scarlet fever and other streptococcal infections,[35, 36, 39, 41] infectious hepatitis,[11] bacterial pneumonia,[10, 24, 46, 63] typhoid fever,[6, 37, 38] gonococcal[53] and meningococcic infections,[30, 47] tuberculosis,[1, 66] typhus,[69] scrub typhus,[29, 50, 58] measles,[9, 21, 43] influenza A infections,[17] mumps,[42, 68] primary atypical pneumonia,[32] infectious mononucleosis,[14] poliomyelitis,[12, 20, 33, 48] and other infectious diseases.

Saphir[44] found evidence of myocarditis in 490 of 5,626 patients that died of a wide variety of infectious disease. Clinical studies have generally indicated a higher percentage of cardiac abnormality. In electrocardiographic studies Burnett and Piltz[7] noted abnormalities in 20 of 55 adults and in 8 of 45 children. Neubauer[31] studied 200 patients with infectious disease and made a diagnosis of myocarditis on clinical observation alone in 55 per cent and on electrocardiographic evidence alone in 24 per cent. Fine, Brainerd, and Sokolow[16] studied 84 patients with a variety of infectious diseases and found clinical and electrocardiographic evidence of myocarditis in about one-third. It is probable that the discrepancy between pathologic and clinical-electrocardiographic evidence of myocarditis arises from the fact that many of the clinical-electrocardiographic abnormalities are due not to true myocarditis but to other pathologic and physiological factors which will be discussed later in this presentation.

Saphir[45] described the heart in myocarditis as characteristically enlarged, with a soft, grayish-yellow myocardium and a few yellowish streaks or minute areas of hemorrhage. Microscopically the process is often patchy, with considerable variation in intensity from one area to another. Muscle necrosis, interstitial edema, and leukocyte infiltration may occur singly or in combination. Saphir emphasized that many sections must be cut and examined before the diagnosis of myocarditis can be excluded. Gore and Saphir[22] reported that of 1,402 instances of myocarditis surveyed at the Army Institute of Pathology, over 90 per cent were non-rheumatic.

Clinical evidence is usually present in myocarditis. The following signs and symptoms justify suspicion: Poor quality of the heart sounds, especially of the mitral first heart sound; a drop in systolic blood pressure of 20 mm. or more; gallop rhythm; pulse rate out of proportion to the fever—either tachycardia or bradycardia; systolic murmur; cardiac enlargement; pallor; cyanosis; vomiting; listlessness; precordial pain; irregularities of rhythm. Saphir[45] stated that myocarditis should be suspected if a patient with an infectious disease suddenly becomes worse without apparent cause.

The electrocardiogram is generally very helpful, especially if unipolar limb and precordial leads are used. The first change is often a broad-topped T wave. This is usually followed in a day or two by diphasic and inverted T waves. The PR interval may become prolonged. More serious conduction defects are not likely to occur except in diphtheritic myocarditis; here they are of grave significance, almost invariably of a fatal condition. RS-T abnormalities are usually minor and not of significance.

Presented in part before the regional meeting of the American Heart Association, October 23, 1952, San Francisco, California.

The QT interval may be prolonged. The QRS complex is generally not abnormal.

There are a number of factors that affect cardiac function during infectious disease. In diphtheria the toxin is almost certainly the cause of myocardial damage. This is probably also true of acute streptococcal infections, typhoid fever, bacterial pneumonia and other infections characterized by toxemia. In other diseases the heart may be directly invaded by the infecting organism. In pyemia from various causes, and in acute meningococcemia, metastatic infection of the myocardium has been noted.[44, 47] In benign viral diseases such as mumps, influenza A and infectious mononucleosis it must be postulated that the myocardium is attacked directly by the virus. It has been demonstrated that the virus of encephalomyocarditis directly invades the myocardium.[51]

Hypersensitivity such as occurs in rheumatic fever is a possible cause of myocarditis. Wallgren[66] expressed belief that pericardial effusion in tuberculosis is often due to a tuberculo-allergic reaction. Polyarthritis in gonococcal infections is sometimes a hypersensitivity phenomenon, and myocarditis may be of similar origin in such diseases.

The possible effect of drugs used in therapy must be considered. It has been shown, both clinically and experimentally, that sulfa drugs can cause interstitial myocarditis. They may also cause inflammatory lesions in the peripheral blood vessels indistinguishable from periarteritis nodosa.[19, 56] Emetine when used in the treatment of amebiasis may be cardiotoxic.[27]

Nutritional factors may contribute to myocardial disease. Simonson, Henschel, and Keys[57] reported that electrocardiographic abnormalities developed in a majority of young men undergoing 24 weeks of semi-starvation. Porter and Bloom[37] were of the opinion that heart involvement is not as great a problem in the present-day treatment of typhoid fever because high calorie diets rather than starvation are now used.

Anemia, preexisting or occurring as a result of infectious disease, results in increased work for the heart and in myocardial anoxia. The electrocardiogram may show RS-T and T wave abnormality as a result of anemia.[13]

Thiamine and niacin deficiency may develop during acute infectious disease. Deficiency in either of these vitamins is deleterious to the myocardium and may be reflected in RS-T, T wave, and conduction abnormalities in the electrocardiogram.[15, 67] Rachmilewitz and Braun[38] in a study of typhoid fever found that electrocardiographic abnormalities reverted to normal much faster in a group of patients given 300 to 600 mg. of niacin daily than in a control group.

Electrolyte imbalance frequently occurs during infectious disease. It has been shown that the acidosis and electrolyte imbalance occurring in diabetic coma often result in electrocardiographic abnormalities.[3] Alkalosis has been shown to cause a definite reduction in the amplitude of the T waves, while acidosis causes a striking increase in their height.[2] Hyperpotassemia results in high, peaked T waves, various degrees of heart block, and RS-T elevations.[61] Hypopotassemia results in low or inverted T waves, depression of RS-T, and prolongation of the QT intervals.[40, 60] The characteristic lesions in the heart in experimentally produced potassium deficiency consisted of myocardial and endocardial necrosis with replacement by scar tissue and infiltration by phagocytes.[18]

Reduction of ionized calcium in the serum results in typical changes in the electrocardiogram—prolongation of the QT interval, sharply pointed positive T waves and a long isoelectric course of ST. Dehydration can cause flattening of the T waves and depression of the RS-T segments.[5]

Fever has been thought by some investigators to be the cause of the electrocardiographic abnormalities seen in infectious disease. There have been a number of studies on the effect of fever on the electrocardiogram[8, 16, 26, 28, 52, 64] Most of these studies are in agreement that in only an occasional patient does fever per se cause electrocardiographic abnormality. The tachycardia associated with fever may cause a generalized lowering of the PQRST complex. A patient with poor coronary circulation may have clinical and electrocardiographic evidence of myocardial anoxia owing to the increased work load of the heart. The myocarditis of acute infectious disease generally appears after the patient has been febrile several days, has no relation to the height of the fever, usually persists after the patient is afebrile, and may not appear until that time.

Except in diphtheria, only rarely is there evidence of congestive heart failure if the patient has had no previous cardiac abnormality. There is very little correlation between abnormalities of venous pressure or circulation time and clinical evidence of myocarditis.[16, 55] Saphir, however, concluded from autopsy findings that many deaths occurring during acute infection were directly due to myocarditis, that sudden death due to myocarditis is not uncommon and that clinical signs of heart failure are often present.[46]

Of late the importance of the peripheral circulation in acute infection has received attention. Perry[34] studied the peripheral circulation in lobar pneumonia in adults. He made observations on the color of the skin, on blood pressure, on response of the skin vessels to histamine, to stroking, to epineph-

rine, and to the back-pressure required to obliterate the blanching caused by epinephrine. He noted that the contractile power of the capillaries was impaired and that recovery of the vessels was slow. He concluded that the circulatory failure in pneumonia is really a failure at the periphery. Greene[23] made similar observations on children with pneumonia and concluded that treatment should be directed at the peripheral circulation rather than the heart. Stead and Eket[59] agreed that while many patients with infectious disease die of circulatory failure, the failure is primarily peripheral rather than central. Peripheral circulatory failure may impair the blood supply to the heart and cause ST and T wave abnormalities difficult to distinguish from those of myocarditis.

In the treatment of circulatory failure in acute infection, therefore, it must be borne in mind that the failure is almost always primarily peripheral, resulting in reduction in volume of circulating blood and inadequate venous return. The output of blood is lowered and the venous pressure is decreased. Digitalis is useless in such circumstances and may be harmful, as it will not slow the heart rate and may diminish an already decreased cardiac output. The judicious use of blood and perhaps epinephrine and adrenocortical hormones may be of value.

However, when true heart failure is present, the ordinary measures should be used. Saphir[49] pointed out that the myocarditis of acute infectious disease is generally a very patchy process. Digitalis may be expected to increase the efficiency of the normal heart muscle fibers until the affected ones have recovered. A special problem arises, however, in diphtheria. In patients that have died from diphtheritic myocarditis, generally most of the myocardium is quite necrotic. The clinical experience has been that digitalis is of little value in the treatment of myocardial failure due to diphtheria, but there is little to lose in a trial of digitalis, since severe diphtheritic myocarditis is almost invariably fatal.

Acute heart failure sometimes develops in babies with bronchiolitis. The babies are generally not in a toxic state but have pronounced respiratory distress because of obstruction of the terminal bronchioles. It has been the observation of many pediatricians that digitalis may be life-saving when cardiac dilation, extreme tachycardia, hepatomegaly and other signs of heart failure develop. It may be postulated that the acute emphysema secondary to terminal bronchiole obstruction causes reduction in the capacity of the pulmonary vascular bed, which results in pulmonary hypertension. In addition the anoxia present causes an increase in pulmonary artery pressure. Anoxia also increases the work and decreases the efficiency of the heart. These factors result in acute dilation of the right ventricle which may develop into cardiac decompensation. Rarely, pertussis may cause a similar problem of cor pulmonale.[62, 65]

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CASE REPORTS

- **Repair of Extensive Decubitus Ulcer of 31 Years' Duration**
- **Mucocele of the Appendix Complicated by Torsion and Gangrene**
- **Cholecystitis and Cholelithiasis in a Sixteen-Year-Old Boy**
- **Tuberculous Lymphadenitis, Allergic Vasculitis and Phlyctenulosis**

Repair of Extensive Decubitus Ulcer of 31 Years' Duration

A. ESTIN COMARR, *M.D.*, Long Beach

SUCCESSFUL CLOSURE of a decubitus ulcer more extensive, more bizarre, with more involvement of the bone and of longer duration than any other observed by the author is here reported.

A soldier then aged 24 years underwent a bilateral hernia operation in a United States Army hospital in France in 1918. While recovering from the operation he had an attack of tonsillitis. During the following week he noticed pain in the region of the knees and hips. The legs were unsteady, with the muscles stiff and control impaired. During 1919 he had attacks of tonsillitis almost every six weeks, and in November 1920 his tonsils were removed.

When the patient married in 1920 he was potent. At that time he was active and generally able to take part in sports, but his friends told him his running had become poor. There developed what he described as a change in sensation, "as if cloth covered the area of the skin which was touched." Concurrent with this decrease in sensation was a further decrease in motor power. In the spring of 1921 symptoms increased rapidly and by June 1921 the patient was almost completely paralyzed in both lower extremities. In August 1921 laminectomy was done; the patient was told that there were "inflammation and adhesions" around the spinal cord.

In 1921 a decubitus ulcer developed over the right ischium. This persisted with exception of a period of almost five months in 1923 during which it remained healed. In 1924 the ulcer became progressively worse and by 1930 another ulcer developed in the left ischial area. The two ulcers were eventually connected by a breakdown in the perineal area in 1935. The patient was confined almost completely to a wheelchair. During these years his wife changed the dressings.

Before the laminectomy in 1921, the patient had progressively increasing difficulty in starting the urinary stream. From 1921 on, he discharged urine only by catheter, which he inserted himself. One day in January 1950, he noticed that the catheter did not reach the bladder but passed through and out the perineal ulcer. Every time this occurred he would turn on his abdomen and his wife would guide the catheter past the large perineal opening of the urethra into the bladder.

During these years a pronounced sensitivity to drugs, antibiotics, adhesive tape, and any sort of rubber developed. The slightest contact with rubber caused a large efflorescence of the skin.

From the Paraplegia Service of Veterans Administration Hospital, Long Beach, and the School of Medicine, University of California at Los Angeles.



Figure 1.—The probe points to the bare catheter lying in the exposed urethra in the perineal portion of the decubitus ulcer.

On examination by a neurologist both lower extremities were observed to be atrophic and the feet were immobilized in a dropped position. There was no volitional motion in the lower extremities and the Beevor sign could not be elicited. The superficial abdominal reflexes could be elicited only faintly on the right and even more faintly on the left, above the umbilicus. The deep abdominal reflexes and the tendon reflexes of the knee and ankle joints were absent. Sensations of touch, pinprick, and vibration were absent below D4 bilaterally. The diagnosis was "chronic myelopathy, etiology unknown (possible arachnoiditis or transverse myelitis of infectious character), clinically complete at the segmental level of D4 with loss of function of both lower extremities and loss of sphincter control of bladder and bowel."

The ulcer extended about 12 inches from buttock to buttock, crossing the perineum; it averaged about 2 inches in width and was rather irregular. It was moderately undermined with necrosis at the base. The adjoining skin had superficial ulcerations. In the depth of the perineal portion of the ulcer, about one-half inch of the bare catheter was visible (Figure 1).

X-ray of the pelvis disclosed pronounced deformity of the right hip, apparently the result of an old fracture dislocation, surrounded by productive bony reaction. Both ischial tuberosities were absent, evidently because of erosion since the ulcer had never been operated upon. Some bone spicules were noted at the bone edges (Figure 2).



Figure 2.—Both ischial tuberosities are absent owing to erosion. Bone spicules are noted at the bone edges.

Daily immersion in brine was begun immediately in order to clean the ulcers.[2] Granulation tissue began to form.

On July 13, 1950, a permanent suprapubic catheter was introduced. The postoperative course was complicated by pronounced allergic dermatitis of the area surrounding the catheter which finally cleared when treated with dry heat and dry dressings. The perineal fistula healed after removal of the intraurethral catheter. Gradually the sensitivity disappeared, but operation on the ulcers was delayed because the patient's wife became acutely ill. In April 1952 the first stage of the closure was performed. All spicules of bone were removed from the ischial areas (Figure 3) with the surrounding pockets of granular and necrotic tissue. (Spontaneous amputation of the ischial bones had occurred.)

No attempt was made to achieve primary closure. Brine baths were continued until fresh granulation tissue appeared. After debridement the left ischial area was practically healed. On July 2, 1952, the second stage of the operation was performed to close primarily the perineal portion and the deep, undermined right ischial area. The entire lining was dissected out and the skin was widely undermined in all directions in order to form flaps. The perineal skin was mobilized as close to the rectum as was safely possible. Large masses of fat were excised from the perineal area and old scars in the gluteus muscle were resected superiorly in order to flatten the area. The skin was then easily closed with three button-retention sutures of wire. Two Penrose drains were inserted through puncture wounds at the base of the inferior skin flap. Two drains were brought out also at each wound angle and mattress-on-edge sutures of No. 32 stainless steel wire were used for closing the skin. Over a period of ten days the drains were gradually removed. The wound healed by primary intention except for a small area of necrosis which granulated quickly on treatment by baths and exposure to sun. The result was excellent (Figure 4).



Figure 3.—The pelvis after spicules of bone were removed at the first stage of the operation.

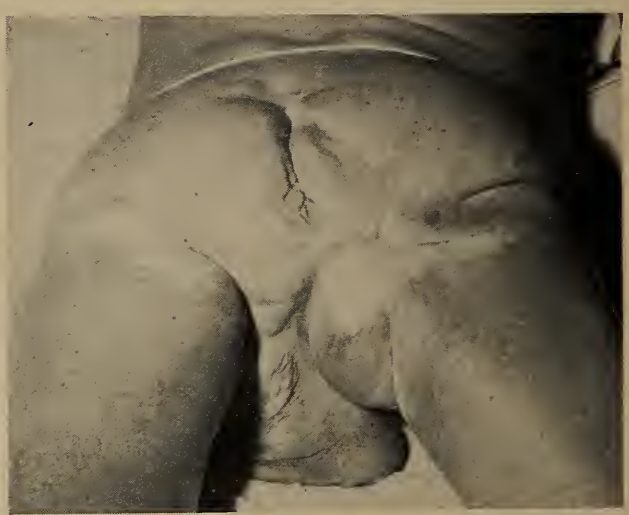


Figure 4.—The ulcer is healed for the first time in 31 years.

DISCUSSION

Several features are of interest in this case:

1. The duration of the decubitus ulcer, exceeding by far that of any other instance observed at this center in patients with spinal cord injuries incurred in World War I. Despite the long period over which the lesion remained open and despite the severity of the process manifested by complete erosion of the ischial bones, it is remarkable that amyloidosis did not occur, as it sometimes does much earlier in such cases.

2. The absence of malignant changes. On microscopic examination this ulcer was found to be benign. In another patient of the same age group with a sacral ulcer caused by a spinal cord injury during World War I, a cancer developed after a much shorter time but, after radical operation, did not recur in more than five years. Since that patient was the only one observed at the hospital in whom cancer developed from decubitus ulcer and since no similar case has been reported, it must be concluded that malignant degeneration of a decubitus ulcer is much rarer than progressive amyloidosis which, although not common, has been observed by the author and reported by others.[3]

3. The remarkable power of recuperation and the resulting operative cure. Obviously, without diversion of the urinary stream by suprapubic cystostomy any attempt at closure would have failed. The perineal fistula resulting from necrosis of a half-inch of the urethra, and the serious and prolonged imbalance of bladder control due to lesion of the

spinal cord, together with absence of skin, made any plastic repair with reconstruction of the urethra at this region impossible, in contrast to the management of urethral fistula located at the penoscrotal junction.[1] The health of the patient improved greatly, since the buttocks became covered with skin for the first time in 31 years; the uroseptic symptoms of chills and fever subsided completely as the suprapubic cystostomy began to function well. With continuing good care the patient has a good life expectancy.

SUMMARY

The case is reported of a 55-year-old veteran of World War I in whom a clinically complete cord lesion developed at the level of D4 after repeated bouts of tonsillitis. Decubitus ulcers occurred on both ischial regions, joined by extension to the perineum, and caused a perineal urethral fistula. After diversional suprapubic cystostomy, operative closure in two stages succeeded although the ulcer had persisted over a period of 31 years and despite extensive bone erosion which led to what amounted to spontaneous amputation of the ischial tuberosities.

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Mucocele of the Appendix Complicated by Torsion and Gangrene

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MUCOCELE OF THE APPENDIX is an unusual condition and the complication of torsion and gangrene, as in the case herein, has been reported only twice previously.[6,7]

From a review of reports in the literature on large series it appears that mucocele is present in about 0.2 per cent of cases in which the appendix is removed; that the incidence is slightly greater in females than males; and that the condition occurs most often in the fourth, fifth and sixth decades of life, although instances have been reported between the ages of 4 and 70.

Results of studies of rabbits by Grodinsky and Rubnitz[5] and Cheng[4] indicated that the pathogenic sequence in the development of mucocele is: obliteration of the appendicial lumen in the absence of suppuration; active secretion of the mucosa; gradual distention of the appendix. In man, inflammation is the most definite and common factor causing mucocele. It is noteworthy that in many reported cases mention is made of a history suggestive of appendicitis which subsided spontaneously. Other reported causes of mucocele are carcinoid tumor of the appendix, appendicial abscess, and adenocarcinoma, endometrioma and tuberculosis of the cecum. The association of mucocele of the appendix and pseudomyxoma peritonei resulting from rupture of an ovarian cystadenoma has been frequently observed, but the relationship is not clear.[3] Rosenfeld[9] stated that mucocele of the appendix occurs in 25 per cent of such cases.

Mucoceles vary in size from slightly larger than a normal appendix to as much as 30 cm. in length. With gradual progressive distention the muscularis undergoes attenuation and fibrous tissue replacement. The wall in larger specimens in which mucocele has been present a long time may consist of only thin bands of hyalinized fibrous connective tissue with extensive areas devoid of mucosa. In the early stages the mucous content of a mucocele is clear and viscid; later it becomes gelatinous and turbid. The presence of small globular bodies of inspissated mucoid material in the dilated lumen has been referred to as "myxoglobulosis."

The most common complication of mucocele—rupture and the extrusion of the contents into the peritoneal cavity—may initiate pseudomyxoma peritonei. Rubnitz and Herman,[10] Cheng[4] and Bergan[1] have presented experimental evidence strongly supporting the postulation that pseudomyxoma peritonei of appendicial origin is a type of foreign body peritonitis resulting from mechanical or chemical irritation. Other complications include intussusception, acute inflammation and inclusion in hernial sacs. In one of several cases of calcified mucocele reported upon by Ostrum and Miller,[8] multiple fistulas developed following rupture of the tumor.

Often a mucocele is entirely asymptomatic and is noted only fortuitously in the course of abdominal or pelvic surgical procedures. When there are symptoms they are more often than not poorly defined—vague abdominal pain or tenderness in the right lower quadrant of the abdomen, sometimes associated with nausea or other manifestations of digestive disturbance. Acute symptoms occur with the various complications and depend on the complication. However, in several reported instances the first evidence of pseudomyxoma peritonei was the unexpected finding of mucinous material in a hernial sac during herniorrhaphy.[3] The difficulty in clinical diagnosis because of the lack of pathognomonic signs and symptoms is attested by the rarity of correct preoperative diagnoses. The only reported correct preoperative diagnoses have been accomplished by the demonstration of a mucocele during roentgen studies with barium enema.[2] Palpable mucoceles have been considered preoperatively as renal, retroperitoneal, cecal, uterine or ovarian masses. In the majority of reported cases in which symptoms were present the preoperative diagnosis was chronic appendicitis.

The treatment is surgical. If rupture has occurred just before operation or occurs during removal of the tumor, the patient can be expected to recover if all the extruded material is carefully removed. If there has been a large volume of mucocele content in the peritoneal cavity for a long time, the prognosis is grave.

REPORT OF A CASE

A 60-year-old Caucasian woman entered the hospital with chief complaint of pain in the lower abdomen, most severe in the right iliac area. At the onset, three days earlier, the pain had been generalized in the abdomen but in the previous 24 hours it had localized. The patient was nauseated and had vomited several times the first day. There was no antecedent history suggestive of appendicitis.

The patient was well developed and well nourished and did not appear to be acutely ill. The systolic blood pressure was 120 mm. of mercury and the diastolic pressure 78 mm. The pulse rate was 90. The temperature was 98.4° F. Tender to palpation throughout, the abdomen was exquisitely tender in the right iliac area and there was involuntary guarding over both lower abdominal quadrants. The uterus was small and mobile and the adnexa normal. Pain in the right adnexal area occurred upon manipulation of the



Figure 1.—Gangrenous mucocele of the appendix with the cecum delivered through the abdominal incision. Note the torsion of the undilated appendicial base.

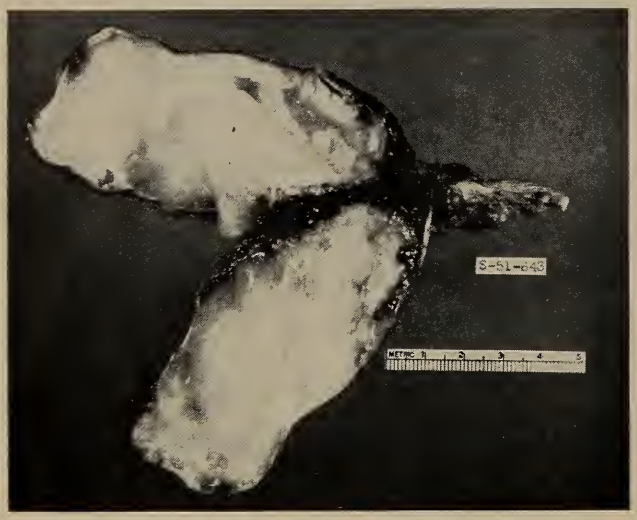


Figure 2.—Longitudinal section of the surgical specimen, showing the contents of the mucocele.

cervix. Leukocytes numbered 15,000 per cu. mm. of blood. Results of urinalysis were within normal limits. A diagnosis of acute appendicitis was made and operation was begun three hours after admittance to the hospital.

The peritoneal cavity, entered through a low paramedian abdominal incision, contained a moderate amount of serosanguineous fluid. A deeply cyanotic sausage-shaped tumefaction of the appendix was delivered into the operative field. The tumor had undergone torsion, consisting of two complete rotations, at the junction of the undilated proximal quarter of the appendix and the dilated distal three-quarters (Figure 1). Appendectomy was accomplished without difficulty. Convalescence was uneventful and the patient left the hospital on the eighth postoperative day.

Pathologist's report. The appendix, with a sausage-shaped tumefaction of the distal three-quarters, weighed 106 gm. The proximal undilated segment was 35 mm. long and 5 mm. in diameter and its lumen was obliterated in the distal 10 mm. Beyond the obliteration was a dilated tense mass 115 mm. long and 40 mm. in diameter. The serosa was smooth, glistening gray-purple, mottled with dark red. The mesoappendix was thickened and hemorrhagic. The leathery wall varied from 0.5 mm. to 2 mm. in thickness and contained spicules of calcification. The gelatinous content was translucent gray to opaque dull yellow (Figure 2). Upon microscopic examination of a section, the wall was observed to be composed of compact laminations of hyalinized collagen connective tissue infiltrated with occasional lymphocytes, plasma cells and neutrophilic polymorphonuclear leukocytes. There was no mucosa. Fine calcifications were imbedded along the inner surface. Compressed smooth muscle, present only on the mesoappendicial border, was undergoing necrobiosis. Dilated veins and dense extravasations of erythrocytes were noted throughout the wall, particularly in the less compact subserosa. In the undilated proximal segment the lumen was obliterated by dense fibrous connective tissue.

Pathologic diagnosis: Mucocele of the appendix with early gangrene.

SUMMARY

A case of mucocele of the appendix complicated by torsion and consequent gangrene is reported. Two previous instances of this complication have been recorded.

18 Canon Drive.

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Cholecystitis and Cholelithiasis in a 16-Year-Old Boy

HENRY HIRSCH, *M.D.*, EARL B. RAY, *M.D.*, and MORRIS E. FREEDLAND, *M.D.*, Bellflower

THE AMERICAN MEDICAL LITERATURE contains little information on gallbladder disease in children and adolescents. Infants and children rarely have calculi in the gallbladder.[1] Acute cholecystitis, when it occurs in childhood, frequently is associated with bacterial infection such as scarlet fever, typhoid fever and septicemia.[1] Complications from obstruction of the gallbladder by intestinal nematodes have been reported.[1] Cholelithiasis in childhood is considered by some investigators to be in most cases a complication resulting from sickle cell anemia in Negroes and from congenital hemolytic anemia in Caucasians. Reports of cases in which coexistence of cholecystitis and cholelithiasis was proved by pathological examination, as in the following instance, are few.

REPORT OF A CASE

A 16-year-old Caucasian male had pain in the right upper quadrant of the abdomen that had increased in severity in the eight hours since onset. It was associated with nausea and vomiting. At first colicky, the pain had become more steady and penetrating and was referred to the lower ribs and back on the right side. In the preceding 13 years the patient had had attacks of pain in the same area, but less severe, at intervals of from one to six months. Usually they lasted a few minutes to a few hours. Physicians who had treated him from time to time were said to have ascribed the pain to "nervous spasm" of the stomach.

Upon examination it was noted that the pain was definitely localized in the right upper quadrant of the abdomen and there was some rebound tenderness. The oral temperature was 99 degrees F. Administration of 0.3 mg. of nitroglycerine brought about partial relief of pain but it was necessary to give 75.0 mg. of Demerol® for complete remission. In light of the severity of the pain the patient was hospitalized. When examination was carried out in the hospital, pain was elicited more readily in the right upper quadrant of the abdomen. Rebound tenderness was somewhat greater than before and there was tenderness over McBurney's area. Right rectus spasm and rigidity were noted, with tenderness greater on the right side of the rectus than the left. Nausea and vomiting persisted. The temperature was 98.4 degrees F. Demerol, 100 mg. every four hours, was required for relief of pain. In roentgen study of the upper gastrointestinal tract no evidence of intrinsic pathologic change in the stomach or in the duodenum was observed.

Erythrocytes numbered 4,850,000 per cu. mm. of blood and the hemoglobin content was 14.8 gm. per 100 cc. Leukocytes numbered 12,000 per cu. mm.—80 per cent segmented cells, 14 per cent lymphocytes, 5 per cent monocytes and 1 per cent eosinophils. The icteric index was 7. Erythrocyte fragility was within normal limits. No abnormalities were noted in urinalysis.

As it could not be determined whether the patient had acute gallbladder disease or appendicitis with the appendix in a high retrocecal position, the abdomen was opened in a way to make both organs accessible. A right rectus incision was made down to the peritoneum, and when the peritoneum was opened much fluid was observed. The appendix, which was slightly inflamed but not enough to cause the symptoms, was amputated. When palpated, the gallbladder was noted to be firm, distended and adherent to the liver. The operative incision was extended two inches and the gallbladder was freed from the liver and removed.

Except for rapid pulse rate and spiking temperature for several days, recovery was uneventful.

PATHOLOGIST'S REPORT

Macroscopic. The appendix, 7.5 cm. long and 0.5 cm. in diameter, was moderately inflamed and there was soft fecal material in the lumen. The mucosa was smooth and pale. The gallbladder, 8x4.5x4.5 cm., had a constricting band part way around it about 2.5 cm. from the proximal end. The mucosa was mottled with patches of red, green and gray and there were reddened fibrous tags on the surface. The lumen was distended and contained very thick dark green bile, a large number of irregularly shaped small dark green calculi and considerable mucus. The wall, mottled like the mucosa, was thick and edematous. Upon examination of the sectioned surface an annular zone of thickening with tough and rather densely fibrous tissue was noted in the region of the constriction previously mentioned.

Microscopic. Much fat and fibrous tissue was observed in the submucosa of the appendix and there were large groups of lymphocytes throughout the wall and fairly numerous eosinophils in the muscularis and serosa. Hemorrhagic necrosis was noted in much of the mucosa of the gallbladder and in the adjoining muscular coat, with extensive infiltration of neutrophils, eosinophils, histiocytes, and lymphocytes. In a portion of the liver adherent to the gallbladder there was extensive interstitial infiltration of lymphocytes. Histiocytes and eosinophils were present in smaller number. There was much necrosis of liver cells, and bile pigment was noted in liver cells, phagocytes and bile capillaries.

Pathologic diagnosis: Healing (subacute) appendicitis; acute and chronic cholecystitis; cholelithiasis; subacute hepatitis with zone of parenchymatous degeneration.

SUMMARY

A case of cholecystitis with cholelithiasis in a 16-year-old Caucasian male is presented. Since it does occur in children, although rarely, it is important to consider gallbladder disease in differential diagnosis when dealing with acute disease of the abdomen in a patient in this age group.

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Tuberculous Lymphadenitis, Allergic Vasculitis and Phlyctenulosis

Report of a Case

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Vasculitis as a manifestation of hypersensitivity to the tubercle bacillus is well known. Erythema nodosum and erythema induratum are generally considered to be vascular hypersensitive reactions that are sometimes due to tuberculosis. Gilrane and Cherry[5] recently pointed out the histologic similarity of polyarteritis nodosa and erythema nodosum. Both are basically vasculitis and both are probably hypersensitive reactions, but erythema nodosum is known to be frequently a hypersensitive reaction to tuberculosis. In a given case, whether or not the allergic vasculitis is due to tuberculosis is important, for evidence is accumulating[2] that corticotropin (ACTH) and cortisone are sometimes harmful to patients with tuberculosis, whereas these hormones are effective in the treatment of periarteritis nodosa.

The clinical appearance of phlyctenular keratoconjunctivitis is characteristic and easily recognized. Phlyctenulosis is almost always an allergic manifestation of tuberculosis.[1,7]

Following is a report of a case considered one of periarteritis nodosa for 18 months because of the clinical and histologic manifestations, and in which corticotropin therapy was given, until the appearance of phlyctenules uncovered the etiologic agent of the allergic vasculitis.

REPORT OF A CASE

The patient, an 18-year-old boy, a native of Guam, first noted pain and swelling in the feet and ankles in March 1951. In June 1951, he was treated with sulfisoxazole at Tripler General Hospital for one month. In September 1951 he again noted gradual onset of pain in the ankles. This

From the Ophthalmology Department of the Surgical Service, Veterans Administration Hospital, San Francisco.

Presented before the Ophthalmology Section of the San Francisco Medical Society, November 4, 1952.



Figure 1.—Microscopic appearance of subcutaneous nodules. *A.* Inflamed artery and adjacent vein. *B.* Inflamed artery with broken elastic lamella. *C.* Inflamed and necrotic artery. Note inflammatory tissue in lumen. *D.* Section showing giant and epithelioid cells.

time tender nodules were present in the skin of the legs and the ulnar borders of both arms. From then on, nodules recurred in those areas many times. The patient complained of occasional dull substernal pain and dyspnea on exertion. Biopsy of a nodule of the right forearm at Tripler Hospital was highly suggestive of periarteritis nodosa. Corticotropin was given by vein intermittently over a two-month period and the condition improved. A specimen was taken from a nodule in the posterior aspect of the left calf, and again intimal proliferation of the wall of the artery with perivascular lymphocytic infiltration was observed.

The patient entered the Veterans Administration Hospital, San Francisco, March 25, 1952. No abnormalities were noted in x-ray films of the chest, in examinations of the urine and the blood, or in studies of the gastrointestinal tract and nervous system. One axillary lymph node, 1x2 cm., was felt.

On June 6, 1952, biopsy specimens were taken from the right forearm, wrist and leg. Moderate lymphocytic infiltration was noted upon examination of sections. There were thrombosed arteries, arterioles and veins with extensive necrosis of their walls. In one section features of a tuberculoid reaction were noted, with several giant cells (no bacilli were found). In another slide there was an excess of eosinophils. The specimens were obtained from Tripler Hospital, and upon comparison it was concluded that the condition was a pleomorphic one, and that while it could possibly be produced by erythema nodosum, Bazin's erythema induratum or migratory vasculitis, the degree of change in the vessels was most consistent with periarteritis nodosa (Figure 1).

After three weeks of relatively good health, fever recurred and the patient was readmitted to hospital July 28, 1952. He had had occasional bleeding from the nose for several days and some discharge of bright blood from the rectum after bowel movements, but had noted no blood in the urine, burning on urination, hemoptysis, cough or dyspnea. The patient complained of pain, redness and lacrimation of the right eye. A history of occasional increased formation of tears in the right eye over a period of many years was elicited. Vision was normal bilaterally. A pustular ezematous area was noted about the left nostril. The right conjunctiva was moderately inflamed. There were three yellowish nodules about 2 mm. in diameter, having the appearance of recently formed phlyctenules, near the limbus of the right eye, and several similar nodules were noted on other parts of the conjunctiva (Figure 2). A number of scars of old phlyctenules were noted on the cornea and there was vascularization at the periphery of the cornea.

The axillary lymph nodes were 2 x 3 cm. in diameter. Cervical and inguinal nodes were palpable and small. Small nodules were noted on the posterior aspect of both calves and the lateral side of the left foot. No other abnormalities

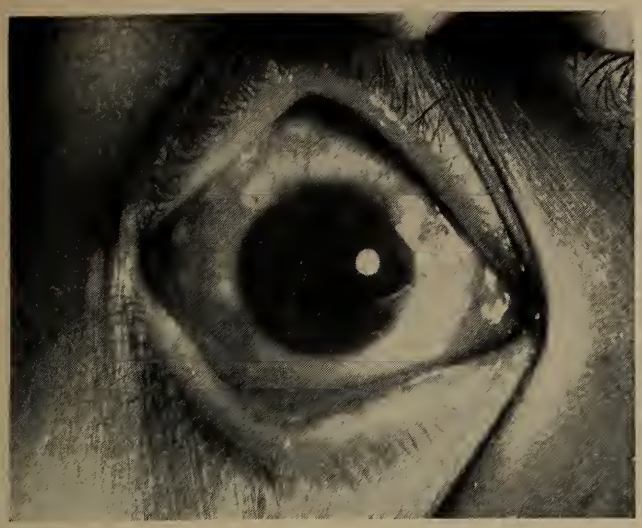


Figure 2.—Three phlyctenules are in characteristic position at the limbus. Other phlyctenules are seen scattered on the conjunctiva.

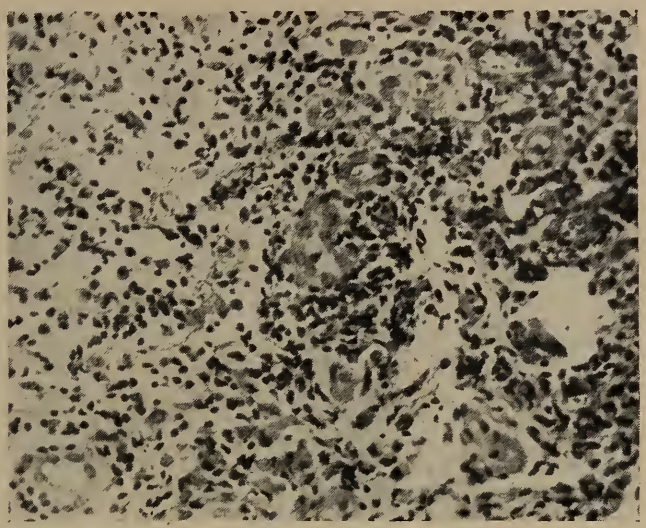


Figure 3.—Microscopic appearance of phlyctenule: a subepithelial accumulation of lymphocytes and macrophages.

were observed in physical, laboratory and roentgen examinations.

A diagnosis of phlyctenular keratoconjunctivitis was made and it was considered probable that the disease was due to hypersensitivity to the tubercle bacillus. Drops of cortisone were instilled in the right eye every hour during the day and every three hours at night. As there was no immediate response, a biopsy specimen was excised from one of the conjunctival nodules and at the same time a lymph node was removed. Histologically the specimen from the eye was a subepithelial accumulation of lymphocytes characteristic of a phlyctenule (Figure 3). In the specimen from the axillary lymph node, confluent areas of caseous necrosis had supplanted most of the normal structure. In the periphery there were numerous Langhans' giant cells and epithelial proliferation—the granuloma typical of tuberculosis. Acid-fast bacilli were present.

The patient was put at rest and treated with streptomycin and para-aminosalicylic acid. One new phlyctenule developed in the right eye and it responded readily to local application of cortisone.

DISCUSSION

The present case of tuberculosis with two manifestations of hypersensitivity, phlyctenulosis and vasculitis, was, except for phlyctenulosis, remarkably like a case recently reported by Gilrane and Cherry.[5] In that case a 30-year-old Caucasian who for 20 months was thought to have periarteritis nodosa was treated with cortisone for five months. Soon afterward a supraclavicular lymph node was noted, and biopsy and guinea pig inoculation proved it to be tuberculous. The diagnosis then was changed to tuberculous lymphadenitis and erythema nodosum simulating polyarteritis nodosa.

Rich[6] said that allergic reaction of anaphylactic type affects primarily smooth muscle and vascular endothelium. Gilrane and Cherry[5] commented upon the similar histologic picture and overlapping characteristics of polyarteritis nodosa, erythema nodosum, and other forms of allergic vasculitis. Polyarteritis nodosa is evidently a manifestation of hypersensitivity with a variety of causes. It has been classified in recent years as a "collagen disease." Erythema nodosum is also allergic vasculitis with a variety of causes, one of which is known to be tuberculosis, but it usually runs a milder course. It has not been classified as a "collagen disease."

Possibly because of the etiological relationship of hypersensitivity and the effect of cortisone and corticotropin on some of these diseases, the concept of collagen diseases has recently received much attention. However, an editorial in the *Journal of the American Medical Association* of September 20, 1952[3] warned that "undue significance should not be attached to the occurrence of fibrinoid changes in connective tissue collagen. Pathologically this is merely a form of degeneration, unspecified in etiology, that occurs in a wide variety of dissimilar diseases. This fact minimizes the clinical usefulness of the term *collagen disease*."

In the present case, current interest in the collagen disease concept may have led to early treatment with corticotropin and delayed the further investigations which finally brought to light the basic etiologic agent.

Although phlyctenulosis has been shown to be a hypersensitive reaction that can be evoked by a variety of antigens, it is clear that it is almost always an allergic manifestation of tuberculosis. Thygeson[7] expressed belief that the phlyctenule is comparable to the tuberculid of the skin. He noted that the incidence of phlyctenulosis has declined in parallel to the decline in tuberculosis in general; and that geographically the incidence is proportional to the local death rate from tuberculosis. Adler[1] said that it is most often associated with tuberculosis of lymph nodes and the decline in incidence is caused by the decline in tuberculosis of the bovine type due to improved sanitation of milk.

Phlyctenulosis is not infrequently precipitated in tuberculous persons by local staphylococcic infection and possibly by other antigens. It is known that animals sensitized by infection with the tubercle bacillus will react in an exaggerated manner to various unrelated bacteria and to certain non-bacterial proteins, a phenomenon that Rich[6] called *heteroallergy*. Phlyctenulosis was once known as eczematous keratoconjunctivitis because of the frequent coincidence of patches of eczema around the nose and mouth. Many observers have been impressed by the frequency of staphylococcic infection in the disease. Thygeson cultured coagulase-positive staphylococci from the conjunctiva and the margins of the eyelids of approximately half of a group of children with phlyctenulosis. He stated that "local bacterial infection appears to be a factor in precipitating the disease in predisposed individuals, but there is no valid evidence to indicate that the bacterial infection is ordinarily causal in itself." Rubert induced phlyctenulosis in tuberculous animals not only with tuberculin but also with

staphylococcic toxin. Guillary noted the same phenomenon in human beings.[8]

The patient in the present case had a pustular eczematoid eruption around the nose coincident with the appearance of tuberculous phlyctenules. It is probable that the organism causing the dermal lesion was the precipitating factor in a person sensitized by the tubercle bacillus—a "hetero-allergic reaction."

Phlyctenulosis should be considered tuberculous until proven otherwise. Management should never be limited to local treatment of the eye or to treatment during a single attack. A search should be made for active tuberculosis in the patient's environment.

SUMMARY

In a case of periarteritis nodosa or erythema nodosum the appearance of phlyctenules uncovered the agent causing allergic vasculitis.

The clinical and histologic characteristics of periarteritis nodosa, erythema nodosum and other forms of allergic vasculitis are overlapping. The advent of cortisone and corticotropin has greatly increased the need for differentiating cases of allergic vasculitis due to tuberculosis from those with other cause.

Phlyctenulosis is almost always an allergic reaction to the tubercle bacillus.

ACKNOWLEDGMENT

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EDITORIAL

Training or Work?

SHOULD THE INTERN YEAR of medicine be considered an additional year of training or is it a period in which the newly graduated doctor performs professional services for a stipend?

This question is relatively new in medical education circles. It has arisen after many years of complete acceptance of the intern year as a year of study and training. And its arrival on the scene has caused reverberations which may take years to settle.

Medical training as we know it today follows a well-established pattern: the premedical years, the four years of medical school and the one year of internship. This last year has consistently been considered as a fifth year of medical school, a year of additional study under the tutelage of practicing physicians. The intern attends patients under the supervision of the attending physician and absorbs, in actual practice, the knowledge which in his earlier years of medical school was more theoretical in nature and not accompanied by personal responsibility.

As witness that the intern year is considered a period of instruction is the fact that some of our medical schools do not grant the M.D. degree until the student has successfully completed his internship. On top of that, many state licensing boards require a year of internship within the state, both as a means of measuring the training and skill of the applicant physician and of assuring his training in the practice of medicine as it is carried out within the state.

Within the past decade the number of approved internships became greater than the number of graduating medical students. When that occurred the value of interns as actual practicing physicians became apparent to hospitals and physicians throughout the country. Hospitals that had not theretofore offered internships found it convenient, if not actually a financial benefit, to set up internships and to use their interns for actual medical practice within the hospital.

In some instances there appears a reasonable question as to whether the intern was not actually performing services for which the hospital or someone else received a fee. If this were the case, the basic concept of the intern as a young doctor completing his medical education would, of course, be entirely lost.

Whatever the genesis of new internships, it is obvious that over the years the number of approved internships has grown out of bounds. In 1952 the A.M.A. Council on Education and Hospitals listed openings for interns which were more than double the number of candidates available.

The law of supply and demand then came into play and hospitals started bidding for interns. The old concept of an intern as a student, allowed "room, board, laundry and cigarette money," was washed into discard on the flood of lucrative offers advanced by some hospitals. In many instances the monthly stipend was more than even the most optimistic medical school senior had ever visioned in projecting himself into the world of interns.

The senior medical student was lured, with offers of cash, to accept an internship which would help establish him financially, or pay off debts, rather than a spot where his medical education could be furthered.

Today there is an even newer development in this field of auctioning off internships. Some closed panel medical care prepayment organizations have seized upon the availability of interns as means of supplying medical care, at a low cost, to the members of their prepayment groups who are entitled to medical or surgical service in their own hospitals. Where such groups have been able to secure approval of their hospitals for intern training, they are in an ideal position to use their interns as low-paid doc-

tors in caring for the beneficiary members of their prepayment plans.

While this development might not seem much of a departure from the intern situation of previous years, it is an economic fact that a prepayment plan in this position is able to bid more for an intern than other hospitals and yet less than it would have to pay for a graduate physician.

Thus the squeeze is put on the senior medical student, who may not have been thoroughly inculcated with the theory of the intern year as a training period. It is this very squeeze which caused the Advisory Committee to the Council on Medical Education and Hospitals to suggest methods of putting the brakes on the number of approved internships. A reasonable requirement that it fill a specified percentage of its approved internships should not harm any hospital which can attract interns through a recognized training program. At the same time, it should discourage the fringe hospitals which cannot attract house staffs on the basis of the training offered and so rely upon compensation to make up for the educational lack.

It is to be hoped that the nation's medical schools and hospitals will see the writing on the wall and will adjust their educational programs to the needs of the public and the medical students, rather than to the convenience of the institution or its attending staff.

LETTERS to the Editor . . .

Poliomyelitis Viremia

During the 1952 poliomyelitis epidemic three children in one Ohio family developed a mild illness, characterized by slight fever, anorexia, nausea, vomiting, headache and sore throat, in various combinations. This symptomatology is comparable with that of abortive poliomyelitis. All three children were completely recovered by the end of four to six days. A fourth child in the same family was without symptoms.

At the height of this brief illness of the three children, throat swabs, rectal swabs and blood specimens were collected from all four children. Horstmann and McCollum of Yale University cultivated and identified Type I poliomyelitis virus from each of the four blood specimens, and from all four throat and rectal swabs. The blood findings were similar to those recorded in orally infected chimpanzees and cynomolgus monkeys. In these animals viremia is noted several days before involvement of the central nervous system, suggesting a rapid preliminary multiplication of poliomyelitis virus outside the central nervous system, in the initial stage of the disease. Whether this initial multiplication occurs in neural or non-neural tissues, is under investigation.

REFERENCE

Horstmann, D. M., and McCollum, R. W.: Poliomyelitis virus in human blood during the "minor illness" and the asymptomatic infection, Proc. Soc. Exp. Biol. and Med., 82: 434, March 1953.

W. H. Manwaring, M.D.

Palo Alto, Calif.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Accident and Health Insurance For C.M.A. Members

MEMBERS OF THE California Medical Association are being offered a new group accident and health insurance policy which provides benefits greater than similar policies have previously contained.

Underwriter for this offering is the Lumbermens Mutual Casualty Co. of Chicago and administration is under the direction of Charles O. Finley & Co., brokers with offices in Chicago and other cities and California headquarters in Los Angeles.

The group policy provides a $5,000 benefit for accidental death and weekly benefits of $50 to $100 for disability from accident or illness. Total disability arising from accident will be compensated for lifetime, while disability from illness will be paid for a maximum of seven years. Most existing policies of this type limit the illness disability payments to periods of from two to five years. The seven-year disability period is believed to be the greatest ever offered in this type of contract.

Two types of policies are available under the group program. The first pays accident benefits from the first day and sickness benefits from the eighth day. The second pays both accident and sickness benefits from the thirty-first day and is correspondingly lower priced.

Weekly cash benefits are listed in amounts of $50, $75 and $100. Association members under the age of 60 may apply for any of these coverages, while those between 60 and 65 years may apply for the two lower coverages and those between 65 and 70 may secure only the $50 weekly benefit.

Provision is made in both types of policy for the payment of partial disability benefits, at half the regular weekly benefits, for partial disability arising from accident.

Disability payments will not require specified periods of attendance by a physician but regular attendance only. After six months of continuous disability, a waiver of premiums is effective. The plan is world-wide in coverage and includes regularly scheduled airline flying.

Hospitalization benefits to provide $70 weekly benefits for a period of three months are available at an additional premium cost.

The underwriter has agreed to accept all CMA members up to age 70, without recourse to a health statement, if 50 per cent of the Association's active membership signs up during the initial enrollment period. Should less than 50 per cent apply for the coverage, the underwriter could require health statements and base the issuance of policies on such statements.

Members above the age of 60 will not be accepted for this coverage after the charter enrollment period ends.

A series of mailings, including an announcement letter, a brochure, a specimen policy and a question-and-answer pamphlet, has been started by the underwriter and broker. This material is designed to answer all questions.

In the announcement letter, it was pointed out that this group coverage is not designed to supplant acci-

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dent and health policies which members may already have through county medical societies, specialty organizations or hospital staffs. Rather, the CMA program is set up to supplement other coverages and to make possible a disability income more in keeping with professional income standards.

Laetrile

THE REPORT of the Cancer Commission on "Laetrile" of March 11, 1953, included a statement that the Butterworth Cancer Research Grants Inc., Los Angeles, had supported the investigation of Laetrile. Mr. A. A. Butterworth has informed the officers of the commission that this support was strictly in the nature of an outright grant of funds for the work which was being done on this agent by its proponents, and in no way indicated any sponsorship of Laetrile by the Butterworth family, whose own funds had set up a cancer research fund some time prior to the development of Laetrile.

The use of the names of the late Mrs. A. A. Butterworth, A. A. Butterworth or Albert W. Butterworth in the report of the Cancer Commission on "Laetrile" was not meant to imply that any member of the Butterworth family had a financial, managerial, promotional or ownership interest in "Laetrile."

The commission is happy to publish this information and also to emphasize that the listing of sources of support was not necessarily meant to imply sponsorship.

IAN G. MACDONALD, M.D.,
Chairman, Cancer Commission,
California Medical Association

Proposed Constitutional Amendment

(Second Publication)

Following is the proposed amendment to the Constitution of the California Medical Association that was introduced at the 1953 Annual Session and was carried over for action at the Interim Session. It has been referred to Reference Committee No. 4, which is to make its report upon it available to delegates at least 30 days before the opening of the 1953 Interim Session in San Francisco, December 12, 1953. California Medical Association members who wish to record opinions on the proposed amendment may send them to the chairman of Reference Committee No. 4, Albert G. Miller, M.D., 77 San Mateo Drive, San Mateo.

Submitted by Sidney J. Shipman, for the Council, May 24, 1953.

Resolved: That Article III, Part A, Section 1 of the Constitution of this Association, the California Medical Association, be amended by striking out the word "District" in subsection (c) of said Section 1, so that Section 1 will read as follows:

Section 1—Composition

"The House of Delegates shall consist of:

"(a) Delegates elected by the members of the component societies;

"(b) Officers of the Association as hereinafter provided;

"(c) Ex-officio, with the right to vote, the Councilors, and

"(d) Ex-officio, without the right to vote, the Past Presidents."

In Memoriam

Blevins, William J. Died in Woodland, August 20, 1953, aged 82, of coronary occlusion. Graduate of the Barnes Medical College, St. Louis, Mo., 1898. Licensed in California in 1898. Doctor Blevins was a member of the Yolo County Medical Society, and a life member of the California Medical Association.

✣

Bobbitt, James D. Died in San Diego, July 16, 1953, aged 68. Graduate of Rush Medical College, Chicago, Ill., 1911. Licensed in California in 1922. Doctor Bobbitt was a retired member of the San Diego County Medical Society.

✣

Briden, Vayle S. Died in Fresno, July 24, 1953, aged 44. Graduate of the State University of Iowa College of Medicine, Iowa City, 1936. Licensed in California in 1937. Doctor Briden was a member of the Fresno County Medical Society.

✣

Crandall, Frank G., Jr. Died in Hollywood, August 25, 1953, aged 57, of cerebral hemorrhage. Graduate of the University of Nebraska College of Medicine, Omaha, 1921. Licensed in California in 1927. Doctor Crandall was a member of the Los Angeles County Medical Association.

✣

Cuneo, Peter J. Died in Bakersfield, September 1, 1953, aged 68, of cerebral vascular accident. Graduate of Cooper Medical College, San Francisco, 1911. Licensed in California in 1911. Doctor Cuneo was a retired member of the Kern County Medical Society.

✣

Derbyshire, Albert L. Died in San Francisco, September 5, 1953, aged 102. Graduate of the Medical College of Indiana, Indianapolis, 1886. Licensed in California in 1888. Doctor Derbyshire was a retired member of the Butte-Glenn Medical Society.

✣

Fidler, Albert J. E., Commander, U.S.N. Died in Inyokern, June 12, 1953, aged 50, of injuries received in an automobile accident. Graduate of the St. Louis University School of Medicine, Missouri, 1929. Licensed in California in 1947. Doctor Fidler was a member of the San Diego County Medical Society, and an associate member of the California Medical Association.

✣

Giordano-Cortese, Modesto. Died August 18, 1953, near Yountville, aged 61, when his automobile struck a tree. Graduate of Regia Università di Napoli Facoltà di Medicine e Chirurgia, Italy, 1916. Licensed in California in 1931. Doctor Giordano was a member of the San Francisco Medical Society.

✣

Glatt, Morris A. Died in Los Angeles, July 18, 1953, aged 63, of cerebral hemorrhage. Graduate of the Stritch School of Medicine of Loyola University, Chicago, Ill., 1917. Licensed in California in 1946. Doctor Glatt was a member of the Los Angeles County Medical Association.

Johnson, Karl O. Died in Bakersfield, August 3, 1953, aged 41, of metastatic carcinoma of the testicle. Graduate of the College of Medical Evangelists, Loma Linda-Los Angeles, 1942. Licensed in California in 1942. Doctor Johnson was a member of the Kern County Medical Society.

✣

Lang, John H. Died in Fullerton, August 1, 1953, aged 71, of coronary artery disease. Graduate of the St. Louis University School of Medicine, Missouri, 1906. Licensed in California in 1910. Doctor Lang was a retired member of the Orange County Medical Association.

✣

Lipkis, Abram. Died August 18, 1953, aged 78. Graduate of Denver and Gross College of Medicine, Colorado, 1907. Licensed in California in 1925. Doctor Lipkis was a member of the Los Angeles County Medical Association.

✣

Liva, Arcangelo. Died in Los Angeles, August 12, 1953, aged 66, of cerebral hemorrhage. Graduate of the Eclectic Medical College of the City of New York, 1912. Licensed in California in 1921. Doctor Liva was a member of the Los Angeles County Medical Association.

✣

Marshall, Benjamin. Died in Eureka, August 10, 1953, aged 77, of arteriosclerosis. Graduate of the College of Physicians and Surgeons of San Francisco, 1902. Licensed in California in 1903. Doctor Marshall was a member of the Humboldt County Medical Society, and a life member of the California Medical Association.

✣

Smith, Loran E. Died in Danville, August 23, 1953, aged 33, of injuries received when an automobile he was driving struck a tree. Graduate of the University of Illinois College of Medicine, Chicago, 1950. Licensed in California in 1951. Doctor Smith was an affiliate member of the Santa Clara County Medical Society.

✣

Turner, Henry C. Died July 19, 1953, aged 55. Graduate of the University of Virginia Department of Medicine, Charlottesville, 1947. Licensed in California in 1952. Doctor Turner was a member of the Los Angeles County Medical Association.

✣

Wellman, Orand F. Died in San Pedro, August 5, 1953, aged 63. Graduate of the College of Physicians and Surgeons of San Francisco, 1922. Licensed in California in 1922. Doctor Wellman was a member of the Los Angeles County Medical Association.

✣

Westphal, Henry G. Died in Glendale, September 2, 1953, aged 72. Graduate of the American Medical Missionary College, Battle Creek, Mich., 1905. Licensed in California in 1918. Doctor Westphal was a member of the Los Angeles County Medical Association.

CALIFORNIA MEDICAL ASSOCIATION

Annual Meeting

LOS ANGELES
May 9-13, 1954

Papers for Presentation

If you have a paper that you would like to have considered for presentation, **it should be submitted to the appropriate section secretary** (see list on this page) not later than November 15, 1953.

Scientific Exhibits

The space available for scientific exhibits is limited. If you would like to apply for space, please write immediately to the office of the California Medical Association, 450 Sutter Street, San Francisco 8, for application forms. To be given consideration by the Committee on Scientific Work, the forms, completely filled out, must be in the office of the California Medical Association not later than December 1, 1953. (No exhibit shown in 1953, and no individual who had an exhibit at the 1953 session, will be eligible until 1955.)

SCIENTIFIC PAPERS . . .

. . . SCIENTIFIC EXHIBITS

PLANNING MAKES PERFECT

AN EARLY START HELPS

SECRETARIES OF SCIENTIFIC SECTIONS

Allergy *Lazarre J. Courtright*
490 Post Street, San Francisco 2

Anesthesiology *Marshall L. Skaggs*
18 Hillcrest Road, Mill Valley

Dermatology and Syphilology . . *Walter F. Schwartz*
696 East Colorado Street, Pasadena 1

Eye, Ear, Nose and Throat—

Eye *Alfred R. Robbins (Chairman)*
1930 Wilshire Boulevard, Los Angeles 57

ENT *Francis A. Sooy*
490 Post Street, San Francisco 2

General Medicine *Edgar Wayburn*
490 Post Street, San Francisco 2

General Practice *Joseph W. Telford*
3255 Fourth Avenue, San Diego 3

General Surgery *William Brock*
2633 Pacific Avenue, Stockton 4

Industrial Medicine and Surgery *Verne G. Ghormley (Asst. Secty.)*
2014 Tulare Street, Fresno

Obstetrics and Gynecology . . . *Charles T. Hayden*
411 Thirtieth Street, Oakland 9

Pathology and Bacteriology *Paul Michael*
450 Thirtieth Street, Oakland 9

Pediatrics *Gordon F. Williams*
1111 University Drive, Menlo Park

Psychiatry and Neurology . . . *George N. Thompson*
2010 Wilshire Boulevard, Los Angeles 57

Public Health *L. S. Goerke*
116 Temple Street, Los Angeles 12

Radiology *H. R. Morris*
1027 "D" Street, San Bernardino

Urology *Thomas I. Buckley*
431 Thirtieth Street, Oakland 9

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

The fourth **Estelle Doheny Eye Foundation Lecture** will be delivered Thursday, November 5 at 8 p.m. in the Los Angeles County Medical Association Building. Dr. Frederick C. Cordes, clinical professor of ophthalmology at the University of California School of Medicine, San Francisco, will deliver the lecture. His subject will be "Endocrine Exophthalmos—an Evaluation."

* * *

The **Southern California Psychiatric Society,** a district branch of the American Psychiatric Association, will hold its annual meeting Saturday, November 14 at the Hotel Statler in Los Angeles. Guest speakers will be Douglass W. Orr, M.D., Seattle, Washington; Colonel Albert J. Glass, M.C., of the School of Military Neuropsychiatry, Fort Sam Houston, Texas; and Milton H. Erickson, M.D., Phoenix, Arizona. The meeting will consist of an afternoon scientific session and an evening cocktail party and dinner-dance. Physicians who are not members of the Southern California Psychiatric Society may register for the meeting as guests.

* * *

In an **exchange of faculty members** between the University of California School of Medicine, Los Angeles, and the University of Mexico School of Medicine, Dr. Justin Stein and Dr. Albert Bellamy of UCLA spent six weeks lecturing at the Mexican university and Dr. Albert P. Leon and Dr. Demetrio Sodi-Pallares came to UCLA for a like period. Drs. Bellamy and Stein lectured on the medical use of radioisotopes, Dr. Leon on infectious and parasitic diseases, and Dr. Sodi-Pallares on electrocardiography.

RIVERSIDE

The **American Society for the Study of Sterility** will hold a mid-annual regional meeting in Palm Springs, California, the week-end of November 6-8. Subjects covered in the formal presentations and panel discussions include among others: The role of surgery in infertility, prevention of sterility, artificial insemination and adoption, timing of ovulation, and the present status of treatment of the infertile male. Outstanding clinicians and investigators in the field of infertility will take part in the program. A major aspect of the meeting involves correlation of recent laboratory investigation with clinical problems.

Further program information may be had by communication with Dr. Edward Tyler, 10911 Weyburn Avenue, Los Angeles 24. Registration is open to all interested physicians and research workers, and may be made by addressing Dr. John O. Haman, 490 Post Street, San Francisco. The registration fee is five dollars. Hotel accommodations may be obtained by writing to the headquarters hotel, Deep-Well Ranch, or the Palm Springs Chamber of Commerce.

SAN DIEGO

The Seventh Annual Postgraduate Assembly of the **San Diego County General Hospital** was held September 23 and 24. Guest speakers were Dr. Thomas Findley, professor of clinical medicine, Tulane University; Dr. Joseph A. Weinberg, associate clinical professor of surgery, University of California at Los Angeles; Dr. Charles Higgins, chief of urology at the Cleveland Clinic; Dr. Verne Inman, professor of orthopedic surgery, University of California, San Francisco; Dr. Paul J. Moses, assistant clinical professor of otolaryngology, Stanford University School of Medicine; and Dr. Phil C. Schreier, professor of obstetrics and gynecology, University of Tennessee.

* * *

Announcement that **Dr. William Geistweit** had been made an honorary member of the San Diego County Medical Society, in recognition of 28 years of service in official capacity, was made at a meeting of the Society last month which was attended by officers of the California Medical Association. Dr. Geistweit was also presented with a scroll from C.M.A. memorializing his many years of service. He has been president of the county society, its secretary for more than 20 years, a delegate to the C.M.A. and chairman of many committees.

SAN JOAQUIN

Dr. C. A. Broaddus of Stockton, director of postgraduate activities of the California Medical Association, was elected secretary-treasurer of the State Medical Postgraduate Association at a meeting of that organization held last summer in New York City at the time of the annual convention of the American Medical Association.

GENERAL

The International Academy of Proctology has announced the establishment and award of a one-year **proctologic research fellowship** in the amount of $1200. This Research Fellowship grant has been awarded to the Jersey City Medical Center, New Jersey, to be administered under the direction of Dr. Earl J. Halligan, surgical director of the Medical Center.

Dr. Halligan is a former international president of the academy. The board of trustees of the International Academy of Proctology will vote another fellowship grant of a similar amount at the time of the next annual meeting of the academy.

* * *

It is **illegal** for a clinical laboratory technologist or a clinical laboratory technician to perform **spinal punctures** in California, according to an opinion rendered by the office of the attorney general of the state. The opinion was given in response to a request by the California State Board of Medical Examiners for a ruling on the subject.

* * *

The fifth annual **Symposium on Heart Disease** sponsored by the Washington State Heart Association and the Washington State Department of Health will be held November 6 and 7, 1953, in the auditorium of the University of Washington Medical School, Seattle. Dr. Herrman Blumgart of Boston, Dr. Howard Burchell of the Mayo Clinic, Dr. David Rutstein of Boston, and Dr. Paul Wood of London, will be guest speakers.

The symposium is the equivalent of nine hours of formal postgraduate training for members of the Academy of General Practice, it was announced.

* * *

The American Society for the Study of Sterility has announced the opening of the 1954 **essay contest** on the subject of infertility and sterility. The winner will receive

a cash award of one thousand dollars, and the essay will appear on the program of the 1954 meeting of the Society. Essays submitted in this competition must be received not later than March 1, 1954. Full particulars concerning requirements of this competition may be had from The American Society for the Study of Sterility, in care of Dr. Herbert H. Thomas, secretary, 920 South 19th Street, Birmingham, Alabama.

* * *

WHY, DOCTOR?—the **C.M.A.'s first television** show for Northern California—began Sunday, September 20, over KGO-TV (channel 7), the ABC station in San Francisco.

The 30-minute show featured commentary by three physicians from the Santa Clara County Medical Society on "The Perfect Machine." Doctors Henry C. Dahleen, Harold Y. Randle and J. Frederick Snyder discussed the human body and how the medical profession helps keep the machine running. Many visual aids were used throughout.

Dr. Douglas M. Kelley, professor of psychiatry and criminology at the University of California, is moderator of the programs which are presented every other Sunday at 6:00 p.m.

On October 11, WHY, DOCTOR? will present a discussion by three physicians, Doctors Ralph A. Reynolds of San Francisco, Lovell Langstroth of Oakland and Alf Haerem of San Mateo, on the problems of appetite and weight control.

On October 25, physicians from Sonoma, Napa and Solano counties will discuss allergy.

County medical societies throughout the Bay Area are cooperating with the C.M.A. in supplying physicians to appear on the programs.

A medical policy board passes on all material, and scripts are cleared by participating societies. Letters from listeners are referred to appropriate societies. The C.M.A.'s Public Relations Department is coordinating production, script writing and promotion of the public service programs.

POSTGRADUATE EDUCATION NOTICES

COLLEGE OF MEDICAL EVANGELISTS

Full-Time Basic Science Course in Surgery and Surgical Specialties

Date: October 5, 1953 through June 11, 1954.

Fee to be announced.

Contact: H. M. Walton, M.D., Chairman, Postgraduate Division, 312 North Boyle Avenue, Los Angeles 33.

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

In Los Angeles

Annual Postgraduate Medical Seminar.

Date: September 28 to December 14, 1953.

Fee: $50.00.

Dermatology in General Practice (limited to 20 students).

Date: October 7-November 11.

Fee: $30.00.

Surgical Anatomy (limited to 30 students).

Date: November 5, 1953-January 27, 1954.

Fee: $75.00.

Dermatology Conference.

Date: February 11, 12, 1954.

Fee: $35.00.

Anesthesiology.

Date: Spring, 1954.

Fee: Details to be announced.

In Long Beach:

Techniques of Hypnosis (limited to 15 students).

Date: October 9, 1953.

Fee: $100.00.

In West Los Angeles:

Advanced Course Techniques and Application of Hypnosis (limited to 15 students).

Date: October 23, 1953.

Fee: $100.00.

Contact: Dr. Thomas H. Sternberg, Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Ophthalmological Conference, University Extension Building, 540 Powell Street, San Francisco.

Date: December 2, 3, 4, 5, 1953.

Fee: $75.00.

Microscopy and Photomicrography.

Date: January 14 to June 3, 1954.

Contact: Office of Medical Extension, University of California School of Medicine, University of California Medical Center, San Francisco 22, California.

STOCKTON POSTGRADUATE STUDY CLUB

Fall Lecture Series, 1953

October 15—Recent Advances in the Practical Use of Hormones—Peter Forsham, M.D., University of California Hospital, San Francisco.

October 22—Diagnostic and Therapeutic Errors in the Handling of Tumors from the Standpoint of a Pathologist—Warren Bostick, M.D., University of California Hospital, San Francisco.

October 28—Differential Diagnosis of Urological Signs and Symptoms—Donald Smith, M.D., University of California Hospital, San Francisco.

November 12—Diagnosis and Treatment of Common Skin Diseases—Eugene M. Farber, M.D., Stanford Hospital, San Francisco.

November 19—Treatment of Infertility, Sterility and Habitual Abortion—Abraham R. Abarbanel, M.D., College of Medical Evangelists, Los Angeles.

SEMINARS OF THE ALUMNI COMMITTEE OF THE CHILDREN'S HOSPITAL, SAN FRANCISCO

Oct. 31, 1953—Naevi, Tumors and Malignancies in Childhood—10:00-4:30.

December 5, 1953—Surgery and Anesthesia in Childhood, with a discussion on the effects of hospitalization on the young child for surgical procedures.

January 23, 1954—The Problems of Prematurity and the Newborn Infant.

March 30, 1954—Acute and Chronic Infections and the Choice of Antibiotics in Treatment.

April 24, 1954—Childhood Ecology, with a discussion of physical, mental and emotional growth and development of the young child; the effects of deprivation of maternal care, and the impact of environment on the child.

A fee of $15.00 will be charged for attendance at all the seminars and those who wish to have further details or be on the mailing list for such details may write to: H. E. Thelander, M.D., Children's Hospital, 3700 California Street, San Francisco.

UNIVERSITY OF SOUTHERN CALIFORNIA SCHOOL OF MEDICINE

Diagnostic and Therapeutic Radiology—No. 858

Date: Course begins by arrangement.

Fee: 3 mos.—$250.00 6 mos.—$ 500.00
9 mos.—$750.00 12 mos.—$1,000.00

This course is designed for a limited number of qualified physicians who wish to prepare for the American Board of Radiology, and who wish specialized training in a particular field of medicine such as orthopedics, cardiology, etc. Course will be conducted in the Department of Radiology at the Los Angeles County Hospital. Course Directors: Ray A. Carter, M.D., George Jacobson, M.D.

Anesthesia

Date: Course begins by arrangement.

Fee: $300.00 (full time, three months).

Basic principles and techniques involved in administering the various anesthetic agents, including oxygen therapy and operating room care of patients. Open to a limited number of qualified physicians and dentists. Emphasis placed on practical administration of anesthetic agents. Presented at the Los Angeles County Hospital. Course Director: J. S. Denson, M.D.

Contact: Gordon E. Goodhart, M.D., University of Southern California School of Medicine, Division of Medical Extension Education, 1200 North State Street, Box 158, Los Angeles 33, California.

INFORMATION

Anxious Times in Tuberculosis*

EDGAR MAYER, M.D., New York City

THERE IS A DANGEROUS TREND prevailing now in the profession at large, to belittle the magnitude of the tuberculosis problem. Indeed, even among physicians engaged in treating tuberculosis there is a deplorable lack of appreciation of the complexity of existing problems.

Present trends in tuberculosis indicate a phase so full of potentiality for good or evil that the question "whither tuberculosis" is no longer one of concern only to statisticians. Clinicians in daily touch with the problem cannot help speculating on current trends and their effects upon treatment of tuberculous patients. Study of current statistics arouses serious reflection regarding their significance and portent for the future. The full picture includes features with ominous potentialities. There are, indeed, some facts which indicate the possibly approaching critical recrudescence of morbidity with increased spread of the disease.

The persistently divergent trend in mortality and morbidity is one that should give us much concern. Recent statistical reports have derived therefrom a serious warning. The figures themselves are perhaps easier to explain by clinical trends than epidemiologic theories. Facts speak for themselves. Mortality from tuberculosis has by now reached the unprecedented low of 16 per 100,000. The downward trend in mortality from tuberculosis has recently become accelerated, and there is every reason to believe that this acceleration will continue. We may confidently expect that soon tuberculosis will cease to be a major cause of death.

This highly optimistic outlook in mortality stands in very sharp contrast with the pessimistic picture of morbidity. Recent statistics indicate that tuberculosis morbidity has tended to remain on a high level. It was recently pointed out by Drolet that morbidity figures for 1950 were higher than those for 1940 by more than 20 per cent.[1] The full implications of this trend were recently considered on the basis of latest morbidity figures, by Mary Dempsey, statistician of the National Tuberculosis Association.[2] In presenting the picture of "tuberculosis today" she paints a grim warning which we quote here in full: "The curious assumption on the part of some people that tuberculosis is no longer a major problem in the United States is not only at variance with the facts but is downright dangerous. Recent estimates place the number of Americans with tuberculosis, both active and inactive, at 1,200,000, a figure large enough to shake the hardiest optimist out of complacency.

"Approximately 400,000 active cases of the disease exist in this country, according to estimates agreed upon by the National Tuberculosis Association and the Public Health Service. Information on file in case registers indicates that of these 40,000 are sputum-positive patients living at home. An additional 75,000, also unhospitalized and with active disease, have not been medically examined during the past year. Add to the total of these two groups an estimated 150,000 unreported active cases, and we get an approximate 240,000 unhospitalized tuberculous Americans, most of whom are in a position to spread the disease. It becomes obvious, therefore, that tuberculosis is very much in the 'major problem' category."

It is natural for the clinician to associate the divergent trend of mortality and morbidity and persistent high morbidity levels with recent trends in the treatment and management of tuberculous patients. Consideration of trends in tuberculosis not only leads to a logical explanation of these trends but also foreshadows the ominous potentiality of an approaching critical phase.

Nothing is more obvious to the clinician than the fact that the recent acceleration in the decline of mortality can be attributed greatly to modern chemotherapy. Streptomycin has beyond question greatly reduced the incidence of fatal tuberculosis. The life-saving effect of streptomycin has not been conclusively demonstrated in fatal hematogenous and miliary tuberculosis. On the other hand, however, since the great bulk of tuberculosis is pulmonary, here its effect at least for the time being is evident in the large numbers of lives saved. What the ultimate fate of these patients will be remains to be seen, and in their outcome may lie the answer to the question of persistently high morbidity.

It seems a paradox to speak of the potential dangers of recrudescence of disease in the present phase of tuberculosis, when we already have at our disposal a choice of several effective agents for its control. Yet this situation is the natural outgrowth of recent developments and rises from a human tendency toward overconfidence in our achievements

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The author is from the New York Post-Graduate Medical School.

and from relaxation of zeal and vigilance. The danger of a critical phase in tuberculosis is inherent in the following developments:

1. Overconfidence in the complete effectiveness of available chemotherapeutic agents has led to dangerous trends in the treatment of patients, in that

(a) more of them are now allowed to cure at home, and

(b) more of them are now treated with drugs in ambulatory fashion, while remaining under care of family physicians, without expert guidance of specialists. These trends make for wider contacts with potential spreaders of the disease.

2. Chemotherapy has resulted in an increased number of patients whose tuberculosis is of arrested, latent but potentially active, or reactivated status. This makes for an increased number of potential spreaders.

Overconfidence in the effectiveness of available drugs tends to blind us to the following facts: (1) By themselves these drugs singly or in combination will not bring about cure in the majority of patients. In a large proportion they result merely in suppression of activity or in temporary arrest or incomplete resolution with residues of potential activity. (2) Our criteria for recognizing latent activity are very inadequate. (3) Patients with lesions of latent activity tend to resist treatment.

It is remarkable how these developments tend to restore the very circumstances which have so long militated against our efforts to control tuberculosis, namely, our inability to bring under control cases of tuberculosis in their latent (incipient) phase. Before modern casefinding by x-ray surveys, the vast majority of new cases were not discovered before the disease had reached a far-advanced stage. Even now too many of the new cases are not discovered in the early phase. Incipient tuberculosis is latent tuberculosis, the activity of which is difficult to determine unless we have serial x-rays.

Today there are many patients whose lesions are latent because of recent chemotherapy. Only long-range observation will reveal whether or not they are healed. Resection of the potentially most dangerous lesions is now being performed in a number of these, and in a considerable proportion recrudescence of disease is a likelihood sooner or later.

Patients with latent tuberculosis have always evinced great resistance even to temporary separation from their work and families. Physicians treating these patients have always had to cope with this resistance. Overconfidence in drug therapy tends to augment this resistance of patients with an increased tendency on the part of physicians to yield. More patients with latent but potentially active disease accordingly will escape that close control in institutions under continuous expert surveillance which in recent years has been acknowledged an essential and important factor in tuberculosis control.

What about the recent epidemiologic shift of pulmonary tuberculosis to higher age groups? The majority of tuberculous patients, particularly males, are now found in the fourth and fifth decades. That which has been said above regarding clinical latency of the disease and resistance to institutional treatment applies particularly to these patients. Furthermore, an ever larger proportion of patients suffering from progressive pulmonary tuberculosis is in advanced age groups in which symptoms of their pulmonary disease tend to blend with symptoms of other diseases of advanced age. This further favors delayed recognition and limits energetic treatment of their tuberculosis.

All of the factors discussed above working together tend to bring about a weakening of tuberculosis control by a trend of events, one leading to the other through force of circumstances.

Last but not least the danger of streptomycin-resistant bacilli should be considered. There is a growing belief that long continued chemotherapy (with combined streptomycin and PAS) results in permanent loss of viability of the bacilli located in the lesions. This belief may ultimately prove to be wrong. If so we may face many recrudescences of tuberculosis by a flareup of (arrested) latent lesions with streptomycin-resistant bacilli. Even more ominous is the threat of an increasing number of new cases infected with streptomycin-resistant bacilli from the above described sources. Some workers now express faith in averting all this with BCG vaccination. This, too, appears to be dangerous overconfidence. An analysis by Drolet of recent reports from countries using BCG extensively since its introduction indicates no effect upon the trend of ratio of new cases.

Should the chain of events above discussed really lead to a recrudescence of tuberculosis, the consequences will then depend largely on the existence or absence of a curative, effective, chemotherapeutic agent. That the "INH" drugs are not such agents is quite apparent by now. Should we fail to develop another more effective drug are we not headed for a critical phase in tuberculosis?

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New Laws Affecting Medical Partnerships, Clinics and Auxiliary "Hospitals"

THE 1953 LEGISLATURE enacted three new laws that directly affect medical partnerships, clinics and industrial or emergency "hospitals."

The first measure, A.B. 459, amended the hospital licensing law by adding a new section prohibiting the use of the word "hospital" by any person unless the facility so designated is licensed by the State Department of Public Health, or unless the facility is one of the specially designated exempt institutions (federal and state hospitals, institutions relying entirely on prayer, mental institutions licensed by the Department of Mental Hygiene, infant shelters and homes for the aged licensed by the Department of Social Welfare, and county hospitals). Under this new law, it will be illegal to use the term "industrial hospital" or "emergency hospital" or the word "hospital" alone or in conjunction with any other words unless the facility is first duly licensed by the State Department of Public Health. Under the hospital licensing law the Department of Public Health does not issue a license until, after inspection, it is satisfied that the institution qualifies as a hospital and meets all the standards set forth in the hospital licensing law and department regulations.

The second measure is S.B. 1770, which completely revises the present clinic licensing law. S.B. 1770 does not become effective until January 1, 1954. Thereafter, however, clinics will be governed by the new clinic licensing law. The new law discontinues licensure for private pay clinics, except those already in existence. It defines charitable clinics, limiting licensed charitable clinics to bona fide charitable corporations; it continues the teaching and research classification; it provides for employers' clinics and employees' clinics, both of which must be operated on a nonprofit basis; outpatient departments of hospitals are exempt, inasmuch as the hospitals themselves must be licensed under the hospital licensing law; and the powers of the state to investigate applicants for a clinic license and to administer the law are clarified, with a specific outline of minimum standards. Violations of the clinic licensing law may be enjoined by court order, on application of the department. Most important of these changes in the clinic licensing law is the elimination after January 1, 1954, of the private pay clinic classification. For the future the use of the term "clinic" by newly organized groups or institutions will be limited to those clinics that are operated as charities or for teaching and research, or by an employer or a group of employees (limited to health services of such employees).

The third measure is S.B. 1349, which modifies the present sections of the Business and Professions Code (Bus. & Pro. Code Secs. 2393 and 2429) that forbid the use of any fictitious name by a physician in connection with his practice. The new law, which will be effective September 30, 1953, continues to prohibit practice under a fictitious name, but expressly permits the formation of medical partnerships, provided that if any such partnership or group does not use the names of all the partners in the conduct of its practice, then it must use at least the surname of one of the partners, plus the words "medical group." For example, if Doctors Black, White, Green, Brown and Gray form a group or partnership, they may designate themselves simply as "Doctors Black, White, Green, Brown and Gray." However, if they desire to use a shorter identification, they may call themselves the "Gray-Black Medical Group" or "Gray Medical Group," etc. As in the past, however, the practice of medicine and surgery under any fictitious or assumed name that does not identify one or more of the physician partners will constitute a violation of the Medical Practice Act.

The cumulative effect of the three new laws can be illustrated as follows: Dr. Brown may not identify his medical office as the "Emergency Hospital" or "Industrial Hospital" unless he qualifies for and obtains a hospital license from the State Department of Public Health. Dr. Brown may not identify his office as the "Silent Hills Clinic," nor may he obtain a license to operate a private pay clinic. Dr. Brown may, however, if he associates other physicians in partnership or association with him, identify the office in which he and his associates practice as the "Brown Medical Group," or *all* names of all physicians in the group may be used without embellishment.

The Chorionepithelioma Registry

Of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons

IT HAS BEEN about five years since the inauguration by the American Association of Obstetricians, Gynecologists and Abdominal Surgeons of the Albert Mathieu Chorionepithelioma Registry. The project was made possible by an initial monetary gift from the late Dr. Albert W. Holman, of Portland, as a memorial to his former colleague, the late Dr. Albert Mathieu, also of Portland. Later the financial support of the Registry came from the Association itself, and during 1952 from the American Cancer Society.

Beginning with January 1, 1953, the continuance of the Registry has been made possible by a gener-

ous annual grant made to the Association for this purpose by one of the strongest and most progressive specialty organizations of this country, the Obstetrical and Gynecological Assembly of Southern California, as a part of its various activities for the advancement of our knowledge of obstetrics and gynecology.

In 1947 an announcement of the formation of the Registry was made more or less simultaneously in the *American Journal of Obstetrics and Gynecology*, the *Western Journal of Surgery, Obstetrics and Gynecology*, the *Journal of the American Medical Association*, the *Archives of Pathology*, and the *American Journal of Pathology*. The purpose of the Registry, as stated in the original announcement, was the collection, authentication and study of chorionepitheliomas and such cognate material as hyatidiform moles. The frequent difficulties in diagnosis in this field, and the incompleteness and confusion in our knowledge concerning such lesions, were the primary incentives for founding the Registry. It has already become perhaps the richest storehouse of such material in the world, and at this writing the registered chorionepitheliomas alone number some 70 cases. As material accumulates and matures for follow-up purposes, publications based on the Registry material will be put out by the Registry Committee, which consists of Dr. Emil Novak, chairman, Baltimore, Md.; Dr. Willard C. Cooke, Galveston, Texas; Dr. Robert A. Ross, Chapel Hill, N. C.; and Dr. Herbert F. Schmitz, Chicago, Ill. The first of these publications will appear in the near future.

While many gynecologists, obstetricians and pathologists have already cooperated in this important work, it has seemed wise to bring the Registry again to the attention of the profession, and to seek for even wider and more general cooperation. Clinical data, together with representative slides or gross tissue, may be sent to the chairman, Dr. Emil Novak, at 26 East Preston Street, Baltimore 2, Md. Regular printed forms for systematizing clinical histories are obtainable from the chairman of the committee. While the Registry makes no pretense of conducting a rapid diagnostic service, prompt acknowledgment of the material will be accompanied by the purely personal diagnostic impression of the chairman, with the explanation that the material will be circulated among all members of the committee for more deliberate collective study before final classification.

Both the sponsoring organization, the American Association, and the Southern California Assembly, which has so generously committed itself to the support of the Registry, invite the cooperation of the profession in this potentially rich investigative project.

N. J. Eastman, M.D.
President, American Association Obstetricians, Gynecologists and Abdominal Surgeons

Emil Novak, M.D.
Chairman, Chorionepithelioma Committee



THE PHYSICIAN'S *Bookshelf*

THE PHYSICIAN IN ATOMIC DEFENSE — Atomic Principles, Biologic Reaction and Organization for Medical Defense. Thad P. Sears, M.D., F.A.C.P., Associate Clinical Professor of Medicine, University of Colorado School of Medicine. The Year Book Publishers, Inc., Chicago, 1953. 308 pages, $6.00.

This book has been very well written and should serve as a valuable source of information for all physicians as well as radiologists particularly in regard to the medical aspects of the atomic bomb and of the place of the physician in civil defense activities. Although the book contains a great deal of scientific information these data have been presented in such a manner that physicians without a background in radiological physics can easily follow the text. It is highly probable that cities will be the front lines of defense in the next war and a great deal of the responsibility will have to be borne by physicians and for that reason it is necessary that physicians and citizens learn as much as possible about civilian defense.

The table of contents of the book is as follows:

Section I—Atomic Theory, Basic Physics, and Atomic Bombs.

Section II—Clinical, Biologic, Pathologic and Therapeutic Aspects of Atomic Warfare.

Section III—Organization of the Medical Department for Atomic Defense. A great deal of discussion has been presented to cover all phases of the role of the physician in atomic defense. The general knowledge of the physician will also be enhanced by the discussions on the basic physics of radioactivity, isotopes, nuclear fission, phenomenology and hazards of atomic bomb bursts, methods of protection against radioactive materials, et cetera.

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DIURETIC THERAPY—The Pharmacology of Diuretic Agents and the Clinical Management of the Edematous Patient. Alfred Vogl, M.D., Assistant Professor of Clinical Medicine, New York University College of Medicine. The Williams and Wilkins Company, Baltimore, 1953. 248 pages, $5.00.

From his own wide experience and from an extensive bibliography, the author has produced this monograph which merits not only the acclaim of the medical bibliophile but also the acceptance and approval of the practitioner of medicine. Although the reader will enjoy the clarity by which the subject matter is presented, he will not read it without converting the information which is presented into practical use.

Based upon concepts which are included in a brief introductory chapter in which edema is classified and its pathogenesis and principles of treatment are clearly identified, the two successive chapters, one on the indications for diuretic treatment and the other on the pharmacology of diuretic drugs, lay a foundation for a clear understanding of the material presented in the following chapters which identify the selection and use of diuretic agents. One is not left with an ill-defined or isolated concept of diuretic drugs because other factors which are pertinent to the cause of edema and its possible elimination are so well integrated.

In his closing remarks, the author states his hope that "this book may contribute to making these achievements more easily available to the man who represents the vital link between scientific progress and suffering patients, the medical practitioner." It is the opinion of this reviewer that the hopes of the author will be realized quickly when the instructions given in this book, which the writer of the foreword calls "both scholarly and practical," are put to use.

* * *

HEADACHES—Their Nature and Treatment. Stewart Wolf, M.D., Professor and Head of the Department of Medicine, University of Oklahoma School of Medicine; and Harold G. Wolff, M.D., Professor of Medicine (Neurology), Cornell University Medical College. Little, Brown and Company, 34 Beacon St., Boston, Mass., 1953. 177 pages, $2.50.

This small book, intended for the layman who wants to gain an understanding of the mechanism of headache, can be read to advantage by the practitioner who is not willing to devote the time to the perusal of the many papers on the subject by the authors. Just what place such a book for the laity has is open to question. Although the statement is made repeatedly that the book in no way takes the place of the physician, and that its suggestions should be followed only after thorough professional examination, there are bound to be many individuals who will use it as a substitute for the medical work-up, possibly with untoward results. On the other hand, the physician can make good use of the book by recommending it to the more intelligent of his patients who suffer from headache of non-organic nature. Although an attempt has been made by the authors to avoid technical terminology, a glossary of such terms would have been an asset.

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DIAGNOSTIC TESTS IN NEUROLOGY. Robert Wartenberg, M.D. The Year Book Publishers, Inc., Chicago, 1953. 228 pages, $4.50.

This small volume is devoted to physical signs of neurological disease that may be elicited at the bedside without special apparatus or laboratory aids. Furthermore, it presents a plea for greater stress on such physical diagnostic methods in modern practice. Certainly no one can find fault with this reasoning, although the present-day trend is quite in the opposite direction.

The author has carried on for many years a fight against the use of eponyms in description of neurological signs and syndromes, and this is carried on in this book. Whether anything is accomplished by substituting for the short term Romberg the appellation "feet together eyes closed test" is open to debate.

Many of the tests described are of more interest to the experienced and curious neurologist than to the student or

general practitioner interested in doing the briefest neurological examination consistent with a reasonable degree of thoroughness. It by no means takes the place of one of the short treatises on neurological examination already available. It does, however, make very interesting reading for the neurologist, particularly if he is acquainted with the author, who is able to inject much of his personality into the text.

* * *

THE LIVING BRAIN. W. Grey Walter. W. W. Norton and Company, Inc., 1953. 311 pages, $3.95.

Here is a book that should be read by every physician. Ostensibly written for the layman, it is not easy reading even for one trained in neurophysiology; yet the content is such as to make it very worthwhile reading. The author has been a pioneer in the field of electroencephalography, to which he brought the viewpoint of the physical scientist rather than the physiologist. The present work is an example of how much the physical sciences have contributed to the production of a theory of mental processes which, although far from complete, at least has a basis understandable without recourse to things metaphysical. The book comprises a consideration of the evolution of the nervous system, and an effort to explain, on a basis of Pavlov's elucidation of the conditioned reflex and knowledge gained from electrophysiology and electronics, how the human brain works as a thinking machine. How well the author has succeeded in this task must be left to the reader; the attempt, however, is provocative and worthy of thought. It is possible that the lay reader could sit down and read the book through in an evening as an interesting variant from science fiction; to one versed in the field of electrophysiology it contains an ample ration for an extended period.

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SYMPATHETIC CONTROL OF HUMAN BLOOD VESSELS. H. Barcroft, M.A., M.D., M.R.C.P., Professor of Physiology, St. Thomas's Hospital Medical School, formerly Dunville Professor of Physiology, Queens' University, Belfast; and H. J. C. Swan, Ph.D., M.B., B.S., F.R.C.P., formerly Lecturer in Physiology, St. Thomas's Hospital Medical School, Research Associate, Mayo Foundation. Distributed by Williams and Wilkins Company, Baltimore, for Edward Arnold & Co., London, 1953. 165 pages, $3.75.

This small volume summarizes clearly the modern concepts of sympathetic control of blood vessels. Most of the work on which it is based was performed by its authors on human subjects, with current techniques and the classical understanding of British physiologists at their best. Chapters on noradrenaline, adrenergic blockade, pheochrome tumors and vasovagal fainting deserve special mention; there is an appendix on plethysmography. The work is highly recommended.

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HOW TO IMPROVE YOUR SIGHT—Simple Daily Drills in Relaxation—Revised Edition. Margaret Darst Corbett (authorized Instructor of the Bates Method). Crown Publishers, Inc., 419 Fourth Ave., New York, 1953. 93 pages, $1.50.

This book is a revised edition of instructions on use of the Bates Method of correction of "eye troubles" by "scientific relaxation." It is divided into 15 chapters, each averaging five pages. The author conducts the School of Eye Education for which the book is the standard text. On the inside of the dust cover it is said that, "The sight-improvement of Dr. William H. Bates was once considered revolutionary: Today it is the one irrefutable, simple, scientific yet commonsense theory known throughout the world."

The book contains many statements that cannot be subscribed to on the basis of modern scientific ophthalmology. For example: "The extrinsic muscles, not the lens, used correctly, make accommodation." Again: "Serious conditions of the eye, formerly considered hopeless, such as atrophy, glaucoma, cataract, sympathetic ophthalmia and even detachment and hemorrhage, may often be improved by relaxation, if there is any vision left at all with which to work and if the method is practiced a sufficient length of time."

A great deal of emphasis has been placed on the value of the Bates Method in the treatment of myopia. Two extensive series have been studied in this country, one at Washington University and the other at the Wilmer Institute of Johns Hopkins. The conclusions of both were similar, and can best be summarized by quoting the last sentence of the Wilmer report which was based on a study of 103 patients given a course of visual training by a group of optometrists and psychologists:

"With the possible exception of educating some patients to interpret blurred retinal images more carefully and of convincing some others they could see better even though there was no actual improvement, this study indicates that the visual training used on these patients was of no value for the treatment of myopia."

* * *

DERMATOLOGY IN GENERAL PRACTICE. Jacob Hyams Swartz, M.D., Assistant Professor of Dermatology, Harvard Medical School. The Williams and Wilkins Company, Baltimore, 1953. 581 pages, $11.00.

This volume can be highly recommended for the general physician. It has certain features which he will find very helpful. The most important is the topographical arrangement under which he can refer to a certain area of the body and find out which dermatoses most frequently occur there; for example, erythema nodosum on the shins. Another valued item consists of specific instructions for applying methods of treatment; for example, the way to give a carbolic shampoo for head lice. The book is full of such valuable everyday details.

The photographs are, in general, good but could be made much more instructive if they were in color. The chapter on the exanthemata is too brief and devoid of photographs. The chapter on syphilis is brief but is well illustrated and gives sound advice on therapy.

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THE CIBA COLLECTION OF MEDICAL ILLUSTRATIONS — Volume 1 — Nervous System. Frank H. Netter, M.D., commissioned and published by the Ciba Pharmaceutical Products, Inc., Summit, N. J., 1953. 143 pages, 104 full-color paintings, sold at cost, $6.00.

The material in this volume has already come in serial form to the office of most physicians as part of the advertising policy of the pharmaceutical company publishing it. Dr. Netter's drawings pertaining to the nervous system are now assembled, together with the text composed by outstanding authorities.

This book is directed to the clinician whose interest and contact with matters neurological is occasional, and who therefore may require some ready neuroanatomic reference to help in the general localization of central nervous system lesions, or to remind him of the fundamental characteristics of some of the more common of these diseases.

The artist has stated his intent to avoid "minute details and controversial theories," and "to compress" in these drawings "the most important and clinically useful facts" pertaining to the anatomy and, to a less degree, the physiology of the nervous system. The details have been eliminated as planned, and considerable information of clinical value may be obtained from the work of the artist and his

collaborators (not named on the title page). However, in any abridged presentation of a subject, the omission of topics or the absence of qualifications may lead to misconceptions. This volume is no exception to the rule. Dr. Netter has not avoided the controversial as well as he may believe. For example, the plate presenting the localization of function of the cerebral cortex includes "suppressor" areas whose very existence in the human cortex—let alone their exact location—has yet to be demonstrated unequivocally. This is known to the specialist in the field but may not be recognized by the practitioner for whom the drawing is made. Unfortunately, there are a number of similar situations in other plates.

In general, however, the non-specialist will find the book helpful and, in most instances, sufficiently accurate for his needs. Its use, however, should include its text as well as its illustrations.

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AN ATLAS OF THE COMMONER SKIN DISEASES—4th Edition. Henry C. G. Semon, M.A., D.M.(Oxon.), F.R.C.P. (London), Consulting Physician for Diseases of the Skin and Former Lecturer to Postgraduates, Royal Northern Hospital. With 147 plates reproduced by direct colour photography from the living subject. The Williams and Wilkins Company, Baltimore, 1953. 371 pages, $13.50.

By combining colored photographs of the various dermatoses with a clinical description of each case, along with appropriate therapy thereof, this volume takes a step in the right direction, as a standard textbook of dermatology with all of the illustrations in color is badly needed.

The photographs in color are, in general, good. The clinical discussions are excellent. The therapeutic recommendations are sound, but unfortunately do not include some of the newer antibiotics for local use only, such as neomycin and bacitracin, for the management of the pyogenic skin diseases, and there is no mention of the great value of ACTH and cortisone in such serious diseases as pemphigus vulgaris. It is possible that these remedies were not available when the text was prepared.

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CLINICAL CARDIOLOGY. Edited by Franklin C. Massey, A.B., M.D., Assistant Professor of Medicine, Hahnemann Medical College, Philadelphia. The Williams and Wilkins Company, Baltimore, 1953. 1,100 pages, $13.50.

This impressive volume, under the editorship of Dr. Massey, represents the work of 33 authors covering the field of heart disease. Within the last few years so many new books and new editions of works dealing with the various aspects of diagnosis and treatment of cardiac disease appeared in print that it is almost customary for the author to apologize for writing another book and to state his reasons for doing so. Dr. Massey makes two points in his preface: One. that hitherto inadequate space has been devoted to some "specialty problems" such as pediatrics, anesthesiology, obstetrics and psychiatry in connection with heart disease. He states, furthermore, that the presentation of some newer data usually takes an unnecessarily long time to appear in textbooks, and that controversial subjects are often omitted. In line with these views one finds several chapters which are usually not included in texts on heart disease; separate sections on anatomy of the heart, physiology of the heart; psychiatric implications of cardiology, etc.

Other chapters follow a conventional pattern; general discussions on the normal heart, on cardiac roentgenology and electrocardiography, followed by chapters presenting various cardiac disease entities, such as rheumatic heart disease, hypertension, endocarditis, pericarditis, and others. One whole chapter (15 pp.) is devoted to "tumors of the heart and pericardium." Two chapters are devoted to cardiac therapy: treatment of arrhythmias and of congestive failure.

While books with multiple authorship offer many advantages, primarily the opportunity for presenting discussion of various subjects by experts in the field. there are well-known disadvantages which are illustrated in this book. Such are: The uneven presentation of various topics with overly lengthy presentation of some and too brief discussion of others; the overlapping and omission of various problems; and the difference in readability of the various presentations. Two chapters impressed the reviewer as unduly long: That on cardiac surgery (100 pp. or ten per cent of the book) which contains not only detailed differential diagnosis of various congenital cardiac defects (which are also discussed in other chapters) but also many minutiae of surgical technique. The other chapter in which the long discussion probably transgresses the line of interest of the average cardiologist is that on arteriosclerosis which deals primarily with the theoretical aspects of its pathogenesis and is 68 pages long. In comparison, it is noteworthy that the subject of rheumatic heart disease *and* rheumatic fever is presented jointly in a 40-page section, and an equal amount of space is devoted to the therapy of cardiac failure. Treatment of hypertension is discussed in eight pages. The section on electrocardiography impresses one as too advanced for the average clinician; the one on roentgenology appears rather elementary.

In spite of these criticisms the book represents a great deal of thought and planning on the part of the editors and a wealth of valuable information. It provides interesting reading to the advanced student, the internist and the cardiologist, and can be recommended. It does not, however, provide enough unusual and original aspects to put it above the average textbook of cardiac disease. Furthermore, the emphasis on up-to-the-minute presentation of current views and on controversial points is hard to evaluate at the present time; it may prove to be an asset but it may turn into a liability by making the book outdated in a relatively short time.

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DISEASES OF CHILDREN—Garrod, Batten and Thursfield—In Two Volumes—Fifth Edition. Edited by Alan Moncrief, C.B.E., M.D., F.R.C.P., Nuffield Professor of Child Health, University of London; and Philip Evans, M.D., F.R.C.P., M.Sc., Physician to the Children's Department and Director of the Department of Child Health, Guy's Hospital. Edward Arnold and Co., London, 1953. Distributed by Williams and Wilkins Company, Baltimore. 1973 pages, $21.00.

This is a new and thoroughly revised edition of the English text originally edited by Garrod, Batten and Thursfield. The present edition is the fifth—the preceding one having appeared in 1947. The editors are Professor Alan Moncrief and Dr. Philip Evans of the Hospital for Sick Children at Great Ormond Street and Guy's Hospital, both in London. The 50 contributors are drawn from all of Great Britain—half of them from the staff of the Hospital for Sick Children.

Besides covering the field of pediatrics in a thorough and competent manner, the text is profusely illustrated and, in addition, provides up-to-date references. These are chiefly concerned with the European literature and, as such, provide valuable source material frequently not mentioned in American texts. These two volumes are recommended to pediatricians, and to those whose practice includes a large share of children, as a valuable supplement to American texts.

ROENTGEN, RADIUM AND RADIOISOTOPE THERAPY. A. J. Delario, M.D., member of the American College of Radiology; American Board of Radiology; Head of Therapeutic Radiology, St. Joseph Hospital, Paterson, N. J. Lea & Febiger, 1953. 371 pages, 65 illustrations, 155 tables, $7.50.

The practice of clinical radiology, like other forms of medicine and surgery, involves both art and science. The scientific part is compounded of various portions of Physics, Chemistry, Physiology, Pharmacology and so forth. This interesting little book stresses principally the physical aspects of the field of therapeutic radiology.

After chapters on the composition of matter, the production of ionizing radiation and the nature of roentgen rays, there are sections dealing with methods of measuring ionizing radiation and a discussion of the physical factors involved in tissue ionization. The author discusses the biological changes produced by radiation, the erythema dose, the recovery of tissue from radiation and the types of injury caused by ionizing radiation. Along with conventional roentgen and radium rays, he discusses ultra-high voltage radiations, radioactive isotopes and other modalities.

As a result of his preoccupation with physical measurements, the sections on recommended clinical radiation dosage tend to be brief and therefore arbitrary. If human tissues, and especially human tumors were standardized, many of the dosage figures he gives would probably be of considerable value. However, each tumor is a law almost unto itself, and is surrounded by a host of highly variable biologic nature. As a result the effective dose for tumor A in patient B may be somewhat different from the effective dose for tumor B in patient A. Nevertheless, the galaxy of facts of interest to radiologists, and those concerned with radiation effects, which the author has assembled into one convenient place, is to be commended. He is chief of the therapeutic radiology division of St. Joseph's Hospital in Paterson, New Jersey.

There is a bibliography of over three hundred references and an adequate index.

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POLIOMYELITIS. W. Ritchie Russell, C.B.E., M.D. (Edin.), M.A. (Oxon.), F.R.C.P. (Edin.), F.R.C.P. (Lond.), Consultant Neurologist to the United Oxford Hospitals, Consultant Neurologist to the Army, Clinical Lecturer in Neurology, University of Oxford. Williams and Wilkins Company, Baltimore, 1952. 84 pages, $3.00.

This book presents a review of the literature, largely American in origin, in the form of a relatively short dissertation on the causes, epidemiology, diagnosis, and treatment of poliomyelitis. The section on differential diagnosis is lamentably weak, and the treatment offers nothing that is new, and much that we believe to be in error, such as prolonged postural (head-down position) drainage, which has been proven to impair respiration after 15 minutes in patients suffering from severe respiratory inadequacy, due to the weight of the abdominal viscera on the diaphragm.

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THE PHYSICAL EXAMINATION OF THE SURGICAL PATIENT. J. Englebert Dunphy, M.D., F.A.C.S., Associate Clinical Professor of Surgery, Harvard Medical School; and Thomas W. Botsford, M.D., F.A.C.S., Clinical Associate in Surgery, Harvard Medical School. W. B. Saunders Company, Philadelphia, 1953. 326 pages with 188 figures, $7.50.

As the authors state in the preface, this book is designed to focus attention on the methods and importance of eliciting signs in surgical conditions. It is a timely book for this age, in which it has become so popular to rely exclusively on myriads of laboratory tests for a diagnosis. The authors have written in a clear and concise manner, and have covered thoroughly the methods of performing a physical examination of various organs and what one might expect to see, feel and hear in the various surgical diseases. The book is divided into two parts, each with subdivisions by systems or organs. The first part is designated "the elective examination," and the second part "the emergency examination." It is particularly recommended for the younger generation who seem to depend entirely too much upon the laboratory for a diagnosis.

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HANDBOOK OF TREATMENT OF ACUTE POISONING. E. H. Bensley, M.B.E., B.A., M.D., F.A.C.P., Director, Department of Metabolism and Toxicology, Montreal General Hospital; and Associate Professor of Experimental Medicine & Lecturer in Toxicology, McGill University; and G. E. Joron, B.A., M.D., C.M., Dip.Int.Med., Demonstrator in Medicine, McGill University and Junior Assistant, Department of Medicine, Montreal General Hospital. Renouf Publishing Company, Ltd., 2182 St. Catherine St. W., Montreal 25, Que., Canada. 201 pages, $2.50.

A book so small that it can be conveniently placed in the pocket or in the physician's bag, with up-to-date and complete information on the treatment of poisoning is the thing to be desired. This book accomplishes these requirements to an unusual extent. It contains but 200 pages, is 4½x7 inches in dimensions, gives the principal symptoms and signs of poisoning by most of the substances encountered in a medical practice outside of industrial medicine and lists in one, two, three order the first aid treatment to be carried out by the physician. Basic principles are discussed in the 35 pages of section 1. The fact that reasons for specific symptoms and treatments are not discussed does not detract from the value of this book as a quick reference for what to do when.

A distinct lack is the treatment of poisoning by insecticides, other than the organic phosphate cholinesterase inhibitors. It is obvious that the authors have had practical experience in the field of toxicology. For example, they emphasize oxygen administration even in the absence of frank cyanosis in poisoning by depressant drugs and they wisely advise preventing overdistention of the urinary bladder, and watching for signs of bronchopneumonia. The reviewer takes issue with two items of treatment; dilute permanganate solution is frequently advocated, contrary to present evidence that it is of little value, and probably dangerous, and ethyl alcohol is advocated in methyl alcohol poisoning. It has recently been shown that although theoretically there may be a metabolic antagonism between these two alcohols, there is no therapeutic antagonism.

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FOOL'S HAVEN. C. C. Cawley. House of Edinboro, 21 Edinboro Street, Boston 11, 1953. 238 pages, $2.75.

Death from reliance on faith and prayer is the theme of this novel. The hero, a Caltech student, falls in love with his landlady's daughter, a high school senior. Their marriage is set for two days after her graduation but is cancelled by her death.

Throughout the courtship the hero realizes that the girl's mother is fanatically religious and has carried her daughter and younger son along with her. The mother bases her reliance on prayer on the fact that doctors had failed to save her husband's life and that a neighbor's son had been operated on for appendicitis and had died. The facts that her husband's disease was incurable and that the neighbor's son had been kept from medical attention until too late do not impress her. The pastor of her church, a self-ordained minister, does impress her and she places herself and her family in his hands and those of the church elders.

When death, aided by a ruptured appendix, does take the daughter, the mother recants none of her philosophy

but stands trial for manslaughter. She is convicted but her pastor, also a defendant, is found not guilty because he has no legal obligation to provide medical care for the girl. The mother is then granted probation and thus goes on her own way with her teenage son.

The author strives to make out a case against the church pastor as an accessory before the fact and, therefore, equally guilty in the girl's death. Morally, his case might stand; legally, it falls short. This book may be used as an "Uncle Tom's Cabin" for those who would find church leaders equally guilty with parents where the lives of minor children are in jeopardy. However, with our constitutional guarantee of freedom of religion, it is doubtful that the moral the author presses will find public, or least, court acceptance.

* * *

THE LOW SODIUM COOK BOOK. Alma Smith Payne, M.A., and Dorothy Callahan, B.S., Research Dietitian, Massachusetts General Hospital. Little, Brown and Company, Boston, 1953. 477 pages, $4.00.

This is an excellent cook book, which also may serve as a textbook, for the patient on a low-sodium diet. The authors have thoroughly informed themselves on their subject, and they tackle the problem of the low-sodium dieter with expertness, good sense and humor.

They have developed many appetizing and interesting recipes and menus—leaning on herbs and wines for seasoning—and they present these with calculation of the sodium, fat and calorie values. There are also appendices which include tables of the sodium, cholesterol and fat content of common foods, sources of commercial low sodium products and the sodium content of public water supplies.

The book is written in a readable, lively style, and should prove especially encouraging to the patient or the family first confronted with the rigors of low-sodium dieting. It sets a standard which should be emulated in other fields of special diets.

* * *

HYPERSPLENISM AND SURGERY OF THE SPLEEN. William Dameshek, M.D., and C. Stuart Welch, M.D., Pratt Diagnostic Hospital, New England Center Hospital and Tufts Medical College Medical School, Boston. Grune and Stratton, Inc., New York, 1953. 84 pages, $10.00.

This book is an extension of Dameshek and Estren's *Spleen and Hypersplenism*, published in 1948, to which has been added a section of surgery of the spleen by C. Stuart Welch, M.D. The material is presented chiefly in graphic form, being adapted from a prize-winning A.M.A. exhibit in 1950. It is hand lettered, printed on heavy paper and bound by a plastic ring. There are numerous illustrations, many in color, which probably account in part for the unusual cost for a volume of so few pages. Three-fourths of the book is devoted to the spleen and its diseases, with consideration of its anatomy and physiology. The different disease states are discussed and illustrative cases are presented. Emphasis is placed on Dameshek's concept of hypersplenism as a disorder resulting from marrow inhibition by humoral regulation. Treatment is discussed, and their reported results with ACTH and cortisone therapy in immunogenic hemolytic anemia are much better than those generally obtained elsewhere. One-fourth of the book is devoted to surgery of the spleen, the indications and technique, with consideration even of portacaval shunt. There is much repetition and oversimplification of the material throughout the book, which would be of most value to medical students, general practitioners and beginners in the field of hematology.

SPLEEN PUNCTURE. Sven Moeschlin, Privatdozent, University Medical Clinic, Zurich. Translated by A. Piney, M.D., Grune and Stratton, New York, 1951. 229 pages, $5.50.

This small volume is the outstanding work on spleen puncture. As in other fields of endeavor, when an individual devotes himself to a particular problem, in Moeschlin's hands, spleen puncture is a simple and valuable procedure. Moeschlin has had no mortality and little morbidity in hundreds of cases, in contrast to the results in the few small series reported from this country. In his book, he gives careful instructions as to the technique of spleen puncture, and the reviewer, having seen the author in action, can confirm its simplicity. The normal and abnormal cell pictures of the spleen are discussed, and there are many fine illustrations, both black-and-white and color. The last three-quarters of the book are devoted to detailed descriptions of the "splenogram" in a great variety of disorders involving the spleen. While splenic puncture can be dangerous and of no value to the uninitiated, this book should be available for reference to all hematologists and pathologists.

* * *

OPHTHALMIC SURGERY — 6th Revised Edition — A Handbook of Surgical Operations on the Eyeball and Its Appendages. J. Meller. Revised by Professor J. Bock; translated and edited by Ray K. Daily, M.D., F.A.C.S., and Louis Daily, Jr., B.S., M.D., Ph.D. (Ophth.), F.A.C.S. The Blakiston Company, New York, 1953. 529 pages, $12.00.

Meller's Ophthalmic Surgery has long been a classic and it has been many years since the English edition has been available to Americans. The sixth edition of the original in German was revised and enlarged by Professor J. Böck, a former student of Meller's. In revising it he has kept the original material of Meller which is applicable to modern surgery and brought the book up to date without destroying its character. The illustrations are clear cut and easily understood. In looking at them, however, it must be remembered that they are drawn from the viewpoint of the Viennese operator who always sits to the patient's right side.

The English translation by the Dailys (mother and son) has been very well done. There is some doubt whether the appendix by the translators adds sufficient to warrant its inclusion in the book. The book contains an excellent index

* * *

SYMPTOMS AND SIGNS IN CLINICAL MEDICINE—An Introduction to Medical Diagnosis—Fifth Edition. E. Noble Chamberlain, M.D., M.Sc., F.R.C.P., Senior Lecturer in Medicine, University of Liverpool. The Williams and Wilkins Company, Baltimore, 1952. 479 pages, 354 illustrations, 19 in color, $8.00.

This is an English attempt to compress the whole of physical diagnosis into one compact volume for the benefit of medical students taking the first course in clinical medicine.

The book is well printed on good grade glossy paper and is well supplied with adequate illustrations (354 illustrations in 451 pages). Other features include a table of symptoms with suggestions for leading questions and area of examination and a glossary of medical terms with their etymology.

Although the try is a worthy one, the reviewer feels that the book cannot be recommended to replace existing American texts on physical diagnosis. The material is stretched too thin and the resultant lack of completeness and detail serves to emphasize the regional differences in teaching.

THE GOLD-HEADED CANE. William Macmichael, M.D. A new edition with a foreword by James J. Waring, M.D., and a preface by William J. Kerr, M.D.; containing the text and illustrations of the fifth edition, including the introduction by George C. Peachey and his annotations. Charles C. Thomas, publisher, Springfield, Illinois, 1953. 186 pages, $6.50.

The original Gold Headed Cane belonged to John Radcliffe, an eminent English physician for whom Radcliffe Library and Radcliffe Infirmary at Oxford are named. On his death in 1714 it passed to Richard Mead (d. 1754) and then in succession to Anthony Askew (d. 1774), William Pitcairn (d. 1797), his nephew David Pitcairn (d. 1809), and finally to Matthew Baillie (1761-1823). After Dr. Baillie's death the Cane was presented by his widow to the New College of Physicians and has reposed for many years in the Museum of the Royal College of Physicians in London. It became widely known following the publication in 1827 of *The Gold-Headed Cane* by an anonymous author, soon identified as Dr. William Macmichael. The work was so popular that a second edition was issued in 1828, and later ones in 1884, 1915, 1923, 1932 and—the present seventh edition—in 1953. It consists of biographies, told in the first person by the Cane, of the five owners, and contains a great deal of material of historical interest concerning the men themselves, their contemporaries and times. The five physicians were all highly successful practitioners of medicine, most of whose work centered about St. Bartholomew's Hospital in London, and reflected the best medical standards of their times, although none contributed much to medical literature or to scientific advancement. As a group they stand for excellence in the art of medicine, of which the Cane has become a symbol.

In 1939, Dr. William J. Kerr, Professor of Medicine at the University of California Medical School established the ceremony, held annually since then, in which a newly designed Gold Headed Cane is awarded to a member of the graduating class selected by his classmates and by the faculty on the basis of "the student's interest in the welfare of his patients during his entire clinical experience."

The emphasis then is not upon pure scholarship but rather, as Dr. Kerr says in the preface, on the student's promise to become a successful physician, which rests more often "upon his ability to apply knowledge and to express those qualities of heart and hand which endear him to his patients." Honorable mention is given to two other students. At the annual ceremony, a speaker of distinction (the first was the late Herbert C. Moffitt) gives an address and is himself presented with a replica of the Cane.

The present volume is attractively printed and bound. It contains a foreword by James J. Waring, a preface by Dr. Kerr, and an introduction by George C. Peachey, giving additional biographical material on the five owners of the Old Cane. For medical educators and other physicians interested in the historical aspects of medicine, this work should be a valuable acquisition.

* * *

THE SCALP IN HEALTH AND DISEASE. Howard T. Behrman, A.B., M.D., Assisant Clinical Professor of Dermatology, New York University Post-Graduate Medical School. With 312 illustrations. The C. V. Mosby Company, St. Louis, 1952. 566 pages, $12.75.

In this handsomely bound and well-printed book, Dr. Behrman presents a distinctive addition to the dermatologic literature. The 540 pages of text are interspersed with 312 photographs and drawings, many of which are quite unusual and all of which are pertinent and instructive. Since the text was written by a single author, it enjoys the advantage of a consistent literary style. Dr. Behrman's writing is quite lucid and oftentimes somewhat restrained in that the findings and opinions of others are fairly presented without strong condemnation or recommendation. The entire contents of the book are concerned with the hair and scalp and are divided into nine chapters and an appendix. The first chapter has in addition to Embryology, Anatomy, and Physiology of the hair and scalp, an interesting section concerning the anthropological considerations of hair form and distribution. Chapter two discusses the normal care of the scalp along with the action of some of the constituents of hair dressing preparations. Chapter three, labeled Alopecia, is perhaps one of the most useful in the book, for in one chapter many different aspects and opinions concerning the various forms of Alopecia are considered at length. The fourth chapter is a short one about Seborrhea and the Seborrheic diatheses. The fifth chapter labeled Infections covers the known infections usually found in the scalp, and many of those that only occasionally or indirectly are manifested in the scalp. Chapter six is cautiously labeled Scalp Disorders of Psychogenic Origin (Proved or Presumptive).

The last chapter on Neoplasms is as inclusive in its subject matter as the other chapters. Preceding an adequate index is the interesting and useful appendix containing 243 formulae of various hair and scalp preparations arranged as to the type of preparation, i.e.: shampoos, lotions, etc. In many instances the name of the originator is given with his particular formula, adding to the interest and historical value of the section. At a glance of the appropriate section one can see the similarity of the various modifications that have been used and select the particular variation most suited to the needs at hand. However, the formulary does not contain some of the more recent preparations that have been described. This book is a valuable addition to any dermatologic library and adding to its usefulness is the large classified bibliography that is found at the end of each chapter.

* * *

THE PRINCIPLES AND METHODS OF PHYSICAL DIAGNOSIS—Correlation of Physical Signs with Physiologic and Pathologic Changes in Disease. Simon S. Leopold, M.D., Associate Professor of Clinical Medicine, School of Medicine and Graduate School of Medicine, University of Pennsylvania. With a **Chapter on Sounds for the Thorax: Acoustic Principles** by S. Reid Warren, Jr., Sc.D. in E.E., Professor of Electrical Engineering, Moore School of Electrical Engineering, University of Pennsylvania. 390 illustrations, 10 Color Plates. W. B. Saunders Company, Philadelphia, 1952. 430 pages, $7.50.

It is the firm belief of the author "that the principles and methods of physical diagnosis should be taught by correlating physical signs with physiologic and pathologic changes in disease." With this in mind, he has compiled a very workable textbook for the second year student.

He has made maximum use of illustrations, gathering together a comprehensive group of photographs, some in full color, drawings and roentgenograms. In many cases, these serve as part of the text, and the reading matter, while entirely adequate, is pared down to the essentials. The book is well—and simply—organized and the table of contents provides a ready reference. The chapter on The History has been placed at the end of the book with the idea that history-taking, as such, should not begin until the student can correlate some knowledge of disease seen at the bedside with the preclinical sciences.

There is an interesting chapter on acoustic principles related to sounds from the thorax, and the line drawings illustrating muscle testing are especially informative.

This book can be well recommended to second year medical students and to teachers of medicine. It may also be used as a reference by the physician in practice.

TRANSACTIONS OF THE AMERICAN COLLEGE OF CARDIOLOGY—Volume II—1952. Bruno Kisch, M.D., Editor. American College of Cardiology, 140 West 57th Street, New York, N. Y., 1953. 252 pages, $5.00.

This volume includes proceedings of the last two meetings of the College of Cardiology. Papers read at the meetings are arranged in order of presentation but in varying detail; some are published in toto, while others appear in form of very brief summaries. Most of the papers contain either data published in more detail elsewhere, or represent reviews of various subjects. Consequently, one finds relatively little original and stimulating material, and it is doubted whether this volume will be of interest to many outside the membership of the College of Cardiology.

* * *

AN ATLAS OF SURGICAL EXPOSURES OF THE EXTREMITIES. Sam W. Banks, M.D., Associate Professor of Orthopedic Surgery, Northwestern University Medical School; and Harold Laufman, M.D., Ph.D., Associate Professor of Surgery and Director of Experimental Surgery, Northwestern University Medical School. W. B. Saunders Company, Philadelphia, 1953. 391 pages with 552 illustrations on 179 plates, $15.00.

This atlas of surgical exposures of the extremities fulfills a pressing need that has been recognized for some years. There have been several similar works published in the last few years but this particular one appears superior to any of the others. The anatomical illustrations are perfect representations not only of the anatomy but also of the practical surgical application of anatomical knowledge to the specific exposure desired for any given surgical procedure. The text is clear, concise and correlated perfectly with the anatomical illustrations.

The book is of such value that the reviewer recommends it highly to anyone interested in the surgery of the extremities and particularly to any student or practicing orthopedic surgeon. No fault can be found with the descriptive text or with the anatomical illustrations.

* * *

FROM THE WORKSHOP OF DISCOVERIES. Otto Loewi, Research Professor of Pharmacology, New York University College of Medicine. University of Kansas Press, Lawrence, 1953. 62 pages, $2.00.

This small volume by a famous pharmacologist is made up of three lectures to medical students. The author elaborates broadly on his philosophy, discussing his vewpoints on medicine and man, on medical research and medical students themselves.

The book will prove of greater interest to the medical philosopher than to the medical technician, even though the third lecture deals with problems in the field of adrenal function.

* * *

SECTIONAL RADIOGRAPHY OF THE CHEST. Irving J. Kane, M.D., Consultant in Chest Diseases, U. S. Naval Hospital, St. Albans, N. Y. Springer Publishing Company, Inc., 44 East 23rd Street, New York, 1953. 154 pages, $7.50.

This is a handsomely prepared monograph dealing with tomography or planigraphy. Following a section on basic principles, there is a collection of roentgenograms, well produced, showing the values of sectional radiography as used by the author.

The illustrations are in "negative" form (i.e., like the original films) and most are clear. The legends are excellent. It is suggested that in future editions, the author might stress the benefits of simpler methods of examination such as posterior lordotic projections, heavy density stereoscopic projections, heavy density and oblique and lateral projections. The time and expense involved in body section radiography, and the radiation dosage often received by the patient are perhaps not adequately emphasized. There are approximately one hundred illustrations, and these alone should make the book of considerable interest to students and beginners in radiography.

The author is a chest physician in New York City. There is an adequate bibliography and index.

* * *

EXCERPTA MEDICA—CANCER (EXPERIMENTAL AND CLINICAL)—Section XVI, Vol. 1, No. 1, July, 1953. Published by Excerpta Medica, N. V., 111 Kalverstraat, Amsterdam C. (The Netherlands). Published monthly. Vol. 1, July to December, 1953, $5.00, succeeding volumes, $10.00 per year. Aided by grants from the National Cancer Institute of the Public Health Service and the American Cancer Society.

The value of an abstract journal in a limited field in medicine is well recognized. The wisdom of attempting an abstract journal in a field as broad as cancer is a subject of some debate. The monograph under review consists of some 95 pages and 424 abstracts. There are about 60 lines to the page. The printing is clear and the paper excellent.

All of the abstracts are in English. They are made by physicians in various parts of the world, ranging from a Dr. Op de Coul in Almelo to a Dr. Schut in Anoka.

It is unavoidable that some of the abstracts are rather uncritical and perhaps poorly selected. On the whole they appear to be adequate and reasonably complete. Probably a useful work for libraries.

* * *

PRACTICAL X-RAY TREATMENT—Fourth Edition. Arthur W. Erskine, M.D. The Bruce Publishing Company, St. Paul, 1953. 195 pages, $5.00.

This is the fourth edition of a well known and useful manual on x-ray treatment. After a section on mechanical factors, the author deals with considerations of skin dose and depth dose. There is a good discussion of scattered radiation. The effects of x-rays on tissue are briefly outlined. Suggestions regarding the treatment of skin diseases, infections, various benign lesions and malignant lesions are then given. Many of the techniques used have stood the test of time. However, not many radiation therapists will be as enthusiastic for transvaginal roentgen therapy as is the author.

There are references at the end of each chapter and there is a good index. The work can be recommended to students, especially those in radiology.

* * *

INFLUENZA AND OTHER VIRUS INFECTIONS OF THE RESPIRATORY TRACT. C. H. Stuart-Harris, M.D., F.R.C.P., Professor of Medicine, University of Sheffield. Distributed by Williams and Wilkins Company, Baltimore. Edward Arnold & Co., London, 1953. 235 pages, $6.00.

Stuart-Harris is a real authority on the subject, as he has done original investigation of a high order, on influenza and other virus infections. Although the book deals with all phases of the subject, including the clinical side, a special feature is a discussion of the development of knowledge and understanding of the viruses which are responsible for these diseases. The recovery of the influenza virus in the ferret in the thirties and the subsequent advancement of knowledge makes a really exciting story. The book is thoroughly up to date and gives the latest information on modern methods of virus diagnosis. In addition to influenza, colds, psittacosis, Q fever and allied conditions are thoroughly dealt with in interesting fashion. There are numerous excellent illustrations, lists of references at the end of each chapter, and an index.



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1. Irvin, J. L.: The Secretion and Enterohepatic Circulation of Bile Acids: Replacement of Bile Acids in Biliary Insufficiency, North Carolina M. J. *13*:206 (April) 1952.

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Medical Report on Tasmanian "Brodie-Type" Twins Is Made

The first detailed United States medical report on Tasmanian Siamese twin girls, joined at the top of the head similar to Chicago's Brodie twins, is contained in the current *Archives of Neurology and Psychiatry*, published by the American Medical Association.

Born in Wynyard, Tasmania, on March 4, 1950, the girls died on January 4, 1951, without being separated.

Dr. E. Graeme Robertson, honorary neurologist at the Royal Melbourne Hospital and Children's Hospital, Melbourne, Australia, who made the report, said that numerous preliminary tests were made prior to the babies' death. The purpose of these tests was to determine whether a separation was feasible. One exploratory operation was undertaken when the twins were five months old.

"Although the induction of the anesthesia and operative procedure lasted only 35 minutes, the physical condition of the twins showed marked deterioration, indicating that a single-stage attempt at separation would not be tolerated," he reported.

"Subsequently, carbohydrate intolerance led to loss of weight; and while teething proceeded, the physical condition of the twins was very poor. Measles also led to further deterioration. Any further attempt at separation was considered impractical."

Dr. Robertson stated that at best, by sacrificing one twin, a dural flap might be given to the other, leaving a very large area of dura to be covered by skin flaps. An almost identical situation existed in the Brodie twins. Other major operative procedures also would have been necessary in the case of the Tasmanian twins, he added.

"In their deteriorating condition, it was believed that the infants would not survive even minor operative intervention, let alone such a major procedure," Dr. Robertson commented.

Because of the possibility of separation when the death of one twin seemed imminent, a test later was undertaken to determine the venous drainage of the brain of the stronger twin. During the course of this procedure, the heart of the stronger twin stopped beating. When medical treatment failed to restore action, an abdominal incision was made and the heart massaged manually. This restored the beat.

On the night of January 4, 1951, one of the twins vomited material which looked like coffee grounds and died immediately. The other twin died within five minutes. A postmortem examination revealed the presence of miliary tuberculosis, and this was presumed to have been a contributory cause of death.

Dr. Robertson described other futile efforts to separate twins joined at various parts of the body. He quoted one twin who refused an attempt of sep-

(Continued on Page 80)



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1. J. Pharmacol. Exper Therap., 100:309, 1950.

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BOOKS RECEIVED

(Continued from Front Advertising Section, Page 46)

STEDMAN'S MEDICAL DICTIONARY—Eighteenth Revised edition. Edited by Norman Burke Taylor, V.D., M.D., F.R.S.C., F.R.C.S.(Edin.), F.R.C.P.(Can.), M.R.C.S.(Lond.), University of Western Ontario and formerly of the University of Toronto. The Williams and Wilkins Company, Baltimore, 1953. 1561 pages, $11.50.

STRESS INCONTINENCE IN THE FEMALE. John C. Ullery, M.D., F.A.C.S., F.I.C.S., Assistant Professor in Obstetrics and Gynecology, Jefferson Medical College, Associate in Gynecology and Obstetrics, Graduate School, University of Pennsylvania. Grune & Stratton, New York, 1953. 149 pages, $6.75.

SURGICAL PATHOLOGY. Lauren V. Ackerman, M.D., Professor of Surgical Pathology and Pathology, Washington University, School of Medicine. C. V. Mosby Company, St. Louis, 1953. 836 pages, 913 illustrations, $14.50.

TEXTBOOK OF GYNECOLOGY. John I. Brewer, B.S., M.D., Ph.D., Professor of Obstetrics and Gynecology, Northwestern University Medical School, The Williams and Wilkins Company, Baltimore, 1953. 532 pages, $10.00.

TEXTBOOK OF MEDICAL TREATMENT—Sixth edition. By Various Authors. Edited by D. M. Dunlop, B.A.(Oxon.), M.D., F.R.C.P.(Edin.), F.R.C.P.(Lond.), Professor of Therapeutics and Clinical Medicine, University of Edinburgh; L.S.P. Davidson, B.A.(Camb.), M.D., F.R.C.P.(Edin.), F.R.C.P.(Lon.), M.D.(Oslo), Professor of Medicine and Clinical Medicine, University of Edinburgh, Physician, H.M. The Queen in Scotland; and Sir John McNee, D.S.O., M.D., D.Sc. (Glas.), F.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.F.P.S., Physician, H.M. The Queen in Scotland; Regius Professor of Practice of Medicine, University of Glasgow. E. & S. Livingstone Ltd., Edinburgh, 1953, through Williams and Wilkins, Baltimore, 1023 pages, $9.50.

TWENTY YEARS OF PSYCHOANALYSIS—A Symposium in Celebration of the 20th Anniversary of the Chicago Institute for Psychoanalysis. Edited by Franz Alexander, M.D., and Helen Ross. W. W. Norton & Company, Inc., New York, 1953. 308 pages, $3.75.

TWENTY-FIVE YEARS OF SEX RESEARCH—History of the National Research Council Committee for Research in Problems of Sex, 1922-1947. Sophie D. Aberle, Member of the National Science Board of the National Science Foundation; and George W. Corner, Carnegie Institution of Washington, W. B. Saunders Company, Philadelphia, 1953. 248 pages, $4.00.



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40 MINUTES FROM LOS ANGELES

Welding Fumes May Affect Breathing

Welding fumes sometimes cause respiratory disorders which may necessitate a change in occupation, it was reported in a recent issue of the *Journal of the American Medical Association.*

Dr. Robert Charr, Philadelphia, a specialist in pulmonary diseases associated with the Jefferson Medical College, the Philadelphia Tuberculosis and Health Association and the Pennsylvania Hospital, described seven cases of welders with breathing difficulties. The symptoms in three instances were sufficiently serious to necessitate a change in work, he said.

In welding, two pieces of metal are fused by means of an electric arc between an electrode and the metal. The electrode, usually of steel, gives off fumes containing minute particles of iron oxide. The electrode also is coated with varying materials. The fumes of fluorides and cadmium coatings are the most irritating, and there is reason to believe chromium may be cancer-producing, Dr. Charr said.

"Cough, expectoration, chest pain, sense of oppression about the thorax and hemoptysis with fever known as fume fever may develop as an acute reaction," he said.

"These symptoms subside on avoidance of exposure to the fumes. If the exposure is continued, roentgenologic changes in the lungs, such as exaggerated linear shadows in some and nodulation in others, may occur."

Dr. Charr reported that it is generally believed that these pulmonary changes are not disabling, but that they occasionally may be harmful.

"Many welders have cough and expectoration but no dyspnea," he wrote. "They have good chest expansion and good tolerance for exercise. In short, inhalation of welding fumes is not seriously incapacitating."

A 1950 U. S. census report showed there were about 276,000 persons in this country engaged in electric arc welding. Of these, almost 10,000 were women.

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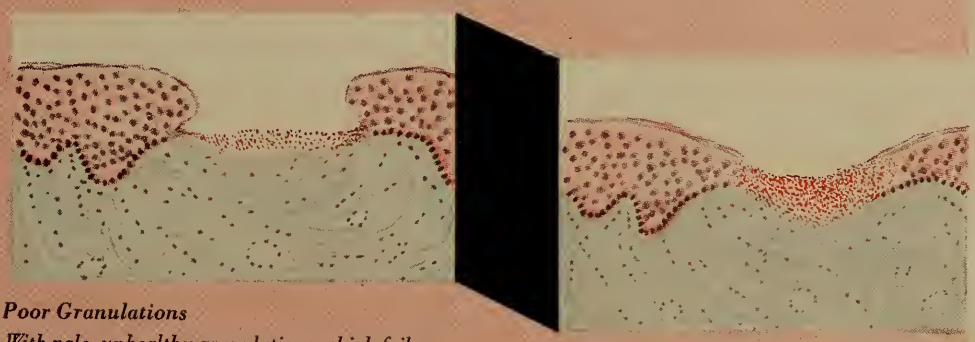
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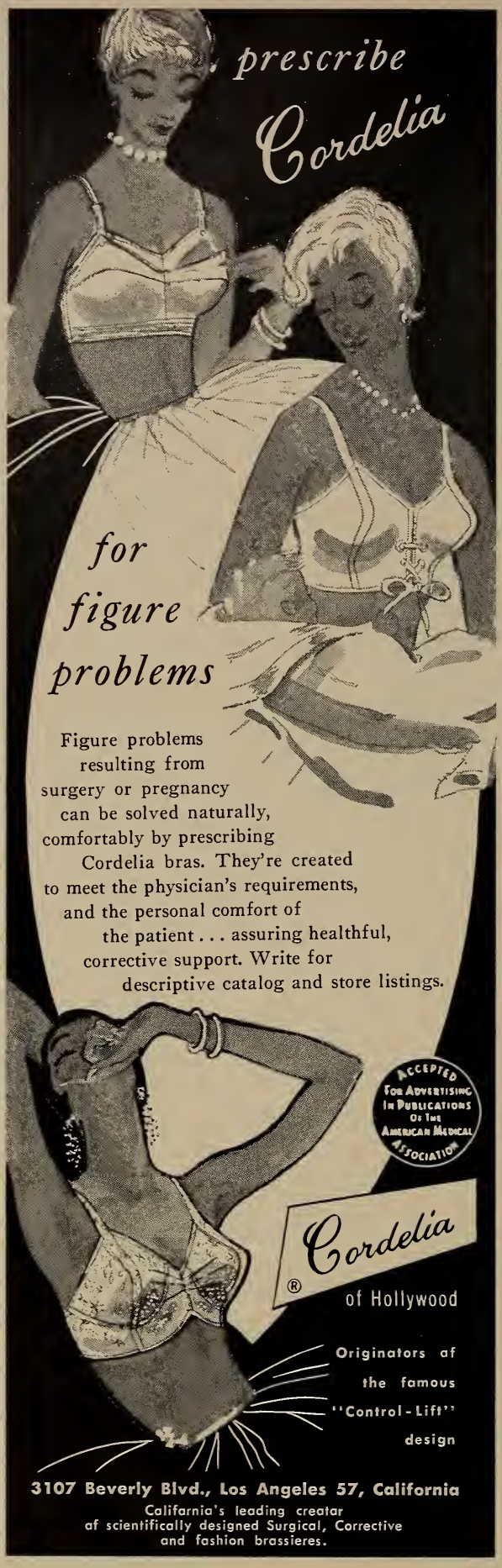
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(1) Moss, N. H.; Morrow, B. A.; Long, R. C., and Ravdin, I. S.: Effectiveness of Chloresium in Wound Healing and Deodorant Effects, J.A.M.A. *140*:1336 (Aug. 27) 1949. (2) Niemiro, B. J.: Delayed Healing in Pilonidal Cyst Wounds, Journal Lancet *71*:364, 1951. (3) Combes, F. C.; Zuckerman, R., and Kern, A. B.: Chlorophyll in Topical Therapy, New York State J. Med. *52*:1025, 1952. (4) Lowry, K. E.: Management of Resistant, Nonhealing Skin Lesions, Postgrad. Med. *11*:523, 1952.

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One Out of Four House Calls by Doctor Unnecessary

In one out of four cases, a request to a physician to make a house call is unwarranted because the patient is able to visit the doctor's office. Two out of three such calls are to treat women.

This conclusion was reached by three Decatur, Ill., physicians following a two and one-half year study of 1,000 consecutive residence visits made by them. The physicians are Drs. William T. Couter, Alvin T. Held and Charles L. York.

Only those patients over 13 years of age and with general illness complaints were included in the study; complaints belonging to specialties other than internal medicine were referred to other practitioners. Only the initial visit to any patient with a medical complaint or to the same patient for a medical complaint unrelated to a chronic condition was counted.

"One of the most interesting facts to emerge from this study was the preponderance of female patients requiring residence visits," the doctors stated in a recent issue of the *Journal of the American Medical Association*. "The overall percentage of female patients was 65.5 per cent, as compared to 34.5 per cent for male patients."

Many of the patients requiring house calls were over 65 years of age, "emphasizing the importance of geriatric medicine," they added.

As to the time of such calls, the doctors reported 325 visits between 7 a.m. and noon, 311 from noon to 6 p.m., 206 from 6 p.m. to 8 p.m., 111 from 8 p.m. to midnight, and 47 after midnight.

"In our discussion prior to embarking on this study, there was a universal cynicism about the urgency of the visit after midnight," they stated. "Yet in these 47 screened calls, 15, or 31.9 per cent, required a physician within four hours; one additional patient should have been seen within 12 hours.

"Twenty-seven patients were symptomatic but not urgently so, and from the physical symptoms only could have been seen the following morning. However, the emotional impact of disease occurring after midnight in particular cannot be easily resolved over a telephone. The remaining four patients needed neither physical therapy nor emotional reassurance at that hour.

"There were 27 visits to female patients and 20 to male patients, a female preponderance of 57.3 per cent."

One hundred and thirty-five different diseases were encountered during the 1,000 residence visits, the doctors pointed out. Fourteen of the conditions covered 66.4 per cent of the total calls. The commonest clinical entities were: influenza 148, follicular tonsillitis 84, nasopharyngitis 79, pneumonia 70, gastroenteritis 67, anxiety state 51, cardiac failure 36, bronchitis 25, acute back pain 23, urinary tract infection 23, coronary artery disease 22, inflammation

(Continued on Page 80)

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1. HUFFORD, A. R.: MICH. STATE MED. SOC. 49:1308, 1950.

2. MCHARDY, G. AND BROWNE, O.: SOU. MED. J. 45:1139, 1952.

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Don't Scratch That Itch!

Itching may be caused by anything from dandruff to diabetes, and it can spread or camouflage real trouble if you scratch, according to Dr. Joseph D. Wassersug, Quincy, Mass.

"Doctors may disagree on many points regarding the nature or treatment of itching skin diseases," Dr. Wassersug wrote in *Today's Health* magazine published by the American Medical Association. "But on one point they are unanimous. Don't scratch!

"They are also pretty much in agreement that most drug store medicines are worse than none at all. In the great majority of cases, these ointments and lotions are too harsh. Literally, they add insult to injury. As a matter of fact, in at least half of the cases of itching the causative factor is not a skin disease but a general medical problem."

Dr. Wassersug divided itching into two classes—that with local causes and that with general causes. Local causes include such things as insect bites and pinworms; vegetable irritants such as poison ivy, burrs, nettles, plant juices, pollens and many drugs and medicines derived from vegetable sources; mechanical irritants such as scratching, rubbing and windburn; extremes of temperature and all sorts of chemical irritants. Even body secretions may cause local irritation.

"General causes of itching are of greater significance," he stated. "A patient with generalized itching but no skin rash may have a general disease such as diabetes, a tumor, Hodgkin's disease or leukemia. At times, allergic factors are responsible, and, in some women, itching is associated with menopause.

"A great many cases of itching skin are due to nervous disorders of one sort or another. It has been definitely found that emotional stress produces itching in some people. The symptoms tend to appear in times of unusual worry or annoyance, particularly if the feelings are repressed. Of the various emotions that can cause itching, the worst is resentment. The psychiatrists say that scratching the affected area may provide satisfaction for thwarted desires or self-punishment for guilty thoughts or deeds.

"With all these factors to be taken into consideration, it is no wonder that drug store medicines taken without the advice of a physician are usually doomed to failure.

"In many cases, itching may be worse than pain. The patient would do well to consult his physician promptly rather than tear away at his flesh with his fingernails."

High Blood Pressure Deaths Highest Among Young People

Mortality from essential hypertension is greatest among young people, decreasing rapidly with age. It also is definitely lower in women, according to a report in a recent issue of the *Journal of the American Medical Association*.

These conclusions were reached by Drs. Robert S. Palmer and Hugo Meunch, Boston, after a 10-year follow-up study of 646 persons suffering from the affliction. At the time the report was prepared, 453 patients were alive.

"The patients included may be regarded as a reasonably unbiased sample of the 10 or 15 million Americans suffering from hypertension, and the results of the analysis may be accepted as a base line for the results of conservative medical treatment with which other treatment results may be compared," the doctors stated.

Several tentative conclusions may be made as a result of the study, the doctors said:

1. Relative risk is highest in young ages and decreases rapidly with age.

2. Mortality in women is definitely lower (except in the more severe types) and increase of severity is slower. In the higher ages with the milder forms of hypertension, the mortality of women is approximately that of the general population.

3. The average age increases from the very mild to the more severe types of hypertension. Each severer type must, to some extent, be a later development of the previous one.

4. Duration of the disease, apart from advancing age, does not seem to have any effect on mortality, except in the most severe type in which short duration is associated with higher mortality at youngest ages.

5. With each increasing degree of hypertension, patients die at a faster rate than that expected of the general public. In general, this increase in mortality tends to diminish with time under observation or higher ages.

Treatment of the patients observed by the physicians was chiefly dietary according to conventional indications; ordinary rules of good hygiene and simple psychotherapy were varied and adapted to the particular patient.

The doctors classified the patients into four groups: (1) those with no or minimal organic change in the three vital areas—head, heart or kidneys; (2) those with definite or marked change, but no functional impairment; (3) those with organic change with functional impairment, and (4) those with papilledema.

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(Continued from Page 58)

aration from her dead sister, to whom she was united at the shoulder and hip, as saying: "As we came together, we will also go together."

"These words of simple dignity, worthy to rank among famous last words, seem to epitomize the fate of craniopagus parietalis," the Australian physician said. "Happily, this tradition has since been broken by the planning, judgment and skillful effort of Dr. Oscar Sugar and his colleagues in Chicago."

One Out of Four House Calls by Doctor Unnecessary

(Continued from Page 68)

of the gallbladder 20, cerebrovascular accident 15, and bronchial asthma 15.

"One hundred and seventy-nine patients were hospitalized (an additional 48 patients needed but refused hospitalization) and received laboratory work as needed for diagnosis," the doctors said.

"On four occasions the patient died prior to our arrival. On each of these occasions, the telephone summons was so urgent that the call was answered

(Continued on Page 81)

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One Out of Four House Calls by Doctor Unnecessary

(Continued from Page 80)

within 15 minutes. One patient died of bronchial asthma and the other three of acute heart failure."

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Warns Against Federal "Medical Supermarkets"

"A chain of federally-operated medical supermarkets," detrimental to the health and economy of the entire nation, is still in the making, Dr. Edward J. McCormick, president of the American Medical Association, stated.

At the Rocky Mountain Radiological Society's midsummer conference, the Toledo, Ohio, surgeon called for a halt in the expansion of federal medical care for veterans with non-service-connected disabilities.

"Continued progress in medicine, as in any other field of free enterprise, is best achieved without interference from a highly centralized government authority," Dr. McCormick told the group.

"There still is a determined effort on the part of some special interest groups to foist upon the American people a national health program that would ultimately evolve into a chain of federally-operated medical supermarkets.

"Preferential treatment for veterans with non-service-connected disabilities cannot be continued indefinitely in view of the detrimental effect on the health and economy of the entire nation."

Dr. McCormick stressed that the American Medical Association does not seek to eliminate the well deserved, free medical care for veterans with service-connected disabilities.

"On the contrary," he said, "it seeks to improve the quality, availability and efficiency of such care by taking out of VA hospitals large numbers of patients whose disabilities would have developed even if they had not seen one single hour of military service."

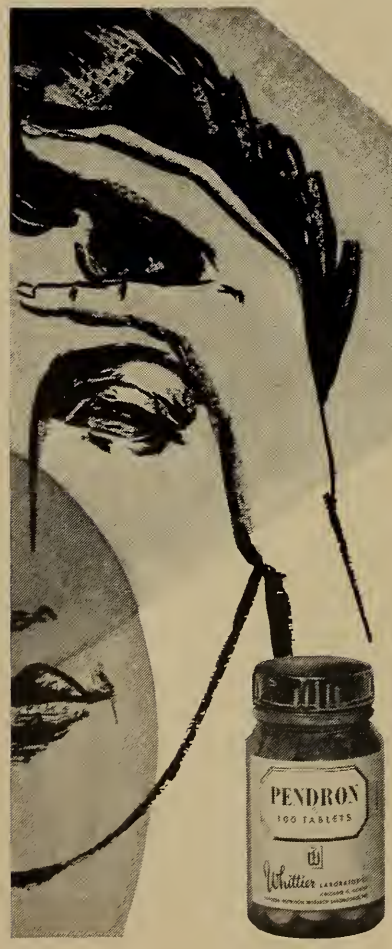
He said that veterans' medical care and hospitalization benefits should be limited to: (1) veterans with peace-time or war-time service whose disabilities or diseases are service-incurred or aggravated, and, (2) within the limits of existing facilities, to veterans with war-time service suffering from tuberculosis or psychiatric or neurological disorders of non-service-connected origin who are unable to defray the expenses of necessary hospitalization.

The provision of medical care and hospitalization in Veterans Administration hospitals for the remaining groups of veterans with non-service-connected disabilities should be discontinued and the responsibility for the care of such veterans should revert to the individual and to the community, he added.

Explaining that he did not believe everyone seeking to bring about federal subsidization of medical care is purposely working against the best interest of the people, Dr. McCormick said:

"There are many zealots among them who sincerely believe in what they are doing. Their great-

(Continued on Page 94)



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Warns Against Federal "Medical Supermarkets"

(Continued from Page 86)

est fault is that they are woefully ignorant of basic medical economics. And some, such as leaders of certain veterans' organizations, are unwittingly planting the seeds of socialization when they continue to foster the expansion of free medical care for veterans regardless of need and service connection.

"Some leaders of veterans' groups claim preferential status for all veterans. In a democratic nation we cannot have two types of citizenship. To serve one's country is a duty and an honor, and the only claim which any of us have as basic right is that principle for which we fought—individual freedom and dignity. We did not follow the colors to become wards of the government."

Dr. McCormick pointed out that there are about 20,000,000 veterans in this country, and that the number is increasing at a rate of 1,000,000 annually. He cited government figures showing that of the 511,895 patients who were discharged from VA hospitals during the fiscal year of 1951, 432,995 (84.6 per cent) were treated for non-service-connected disabilities, and only 78,900 for service-connected ailments.

In 1951, Veterans Administration medical expenditures totaled $600,388,455. Of this amount, $461,695,848 was expended on the VA hospital program.

"As of July 31, 1952, the Veterans Administration had in operation 154 hospitals with 116,986 beds," Dr. McCormick told the meeting. "Under construction were 22 hospitals, including additions, which would provide an additional 13,231 beds. In the planning stage were six hospitals and 5,000 beds. This would bring the total of VA hospitals to 182, with 135,217 beds."

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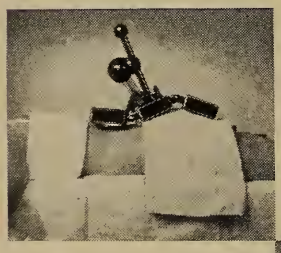
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1. Morrison, L. M.: Personal communication.

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Many Medical Advances Made Under Stimulus of Wartime Exigency

Many significant advances in medical science have been made by medical officers in the armed services or by civilian physicians working under the stimulus of wartime exigency, in the opinion of Dr. John F. Fulton, New Haven, Conn.

"Whereas the ultimate compensations of war to any society are usually few and seldom recognized, in the field of medicine, over the years, they have been numerous and many of them highly important," Dr. Fulton, Sterling professor of the history of medicine at Yale University, wrote in a recent issue of the *Journal of the American Medical Association.*

Experience gained in World War I aided in the sphere of prevention of infectious diseases during World War II, he pointed out. Mass inoculation, particularly against tetanus, gained momentum during World War II, while the importance of moving casualties rapidly from the front lines before infection had set in was another lesson learned during World Wars I and II.

"Between World War I and World War II there were many important contributions useful not only in time of war but for medical and civilian defense," Dr. Fulton stated. "Undoubtedly the most important were the developments in the field of antibiotics. Much research had been done in them before 1939, but their introduction as therapeutic agents was greatly expedited by World War II.

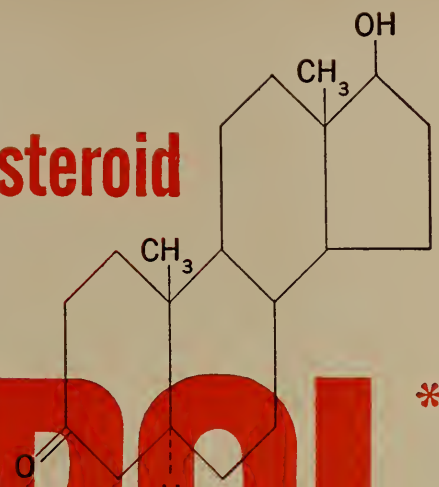
"Surgery has probably been more benefited by wartime research than any other branch of medicine. In World War I, no surgeon would have dreamed of closing an infected wound, or even one that was potentially infected, without leaving a drain. Now, thanks to the use of chemotherapeutic agents such as the sulfonamides and penicillin, it is possible to close wounds of almost every description, even those of the abdomen, without drainage and without fear of subsequent complication from infection, provided all dead tissue has been carefully removed prior to the closure.

"A second important result of the use of penicillin and the sulfonamides has been the avoidance of unnecessary amputations and unnecessary removal of potentially viable tissue.

"Surgery has also been influenced by wartime studies on human blood and the blood plasma fractions that have become available in pure form, again as a direct result of wartime medical research. As a result of these investigations on blood and its fractions, the civilian surgeon has an imposing array of blood substitutes ready for his use at any time, and he is able to count on a supply of stored whole blood rather than having to find a blood donor at the scene of an accident or at some outpost of civilization."

(Continued on Page 14)

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Many Medical Advances Made Under Stimulus of Wartime Exigency

(Continued from Page 10)

Important new branches of medicine, important to the armed forces and to civilians alike, have been created by wartime necessity, he added. One of these is the area of chemical applications in disease control such as insect repellents, insecticides and anti-malarials.

Progress in aviation, stimulated by developments in military aircraft, has led to many advances of outstanding value both for medical defense and for civilian aviation, Dr. Fulton pointed out. These advances include improvements in oxygen administration and masks, pressurized aircraft cabins, protection from acceleration in high-speed aircraft, and use of the rear-facing, heavily moored aircraft seats.

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Transistors Reduce Hearing Aid Operational Costs 80 Per Cent

Transistors, a new substitute for the vacuum tube in hearing aids, may save users of such devices as much as 80 per cent in operational costs, according to a report by the Council on Physical Medicine and Rehabilitation of the American Medical Association.

All-transistor hearing aids need only one battery instead of the two necessary for the operation of standard types, thus eliminating high battery replacement costs, it was stated in the report which appeared in a recent issue of the *Journal of the American Medical Association.* A recent development in the electronic field, the transistor has been under study and experimentation for several years, and has been used in hearing aids only for a few months.

"The most important advantage of the transistor hearing aid that can be claimed at the present time is a significant reduction in operational costs, as much as 80 per cent and perhaps more," the report stated.

At the present time it appears that no significant change will take place in the size or weight of transistor hearing aids as the battery space is filled with other components of the transistor circuit that are needed for its operation. The new type hearing aid also does not appear to have any significant improvement in amplification, in tone quality, or in fidelity over the other kinds, the report added.

Although transistor hearing aids offer promise, "it is reasonable to expect that many deficiencies and shortcomings in performance will be encountered," the report pointed out. Therefore, it was recommended that purchasers of the instrument insist on a guarantee that the hearing aid will be maintained in top condition for at least one year and that all defective transistors will be replaced without cost.

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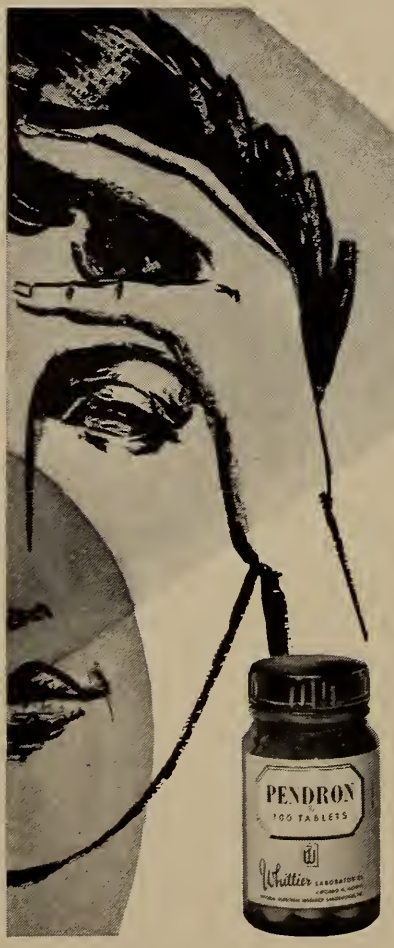
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Farm Accidents Caused by Individual Carelessness

One of the most hazardous of all occupations today is farming. Most farm accidents are preventable, and usually only one person is to blame—the person involved in the accident—it was stated editorially in a recent issue of the *Journal of the American Medical Association.*

In 1952, 62 out of every 100,000 farm residents lost their lives as a result of some sort of farm accident, the editorial pointed out. An additional 1,200,000 farm residents suffered injuries.

Farming has the third highest death rate among the major industries in the nation, surpassed only by the mining and other extractive and construction industries, according to the editorial. Motor vehicle accidents among farm residents accounted for 6,000 deaths and 210,000 injuries, home accidents for 3,500 deaths and 540,000 injuries, occupational accidents for 3,800 deaths and 320,000 injuries, and public non-motor-vehicle accidents such as streetcar or sidewalk mishaps for 1,300 deaths and 150,000 injuries.

"Increasing use of machinery on farms may be a causative factor in the high death rate," the editorial stated. "There were about 700 fatal and about 25,000 nonfatal accidents involving farm wheel tractors in 1952. Fifty-five per cent of these deaths resulted from overturned tractors and 16 per cent as a result of falling from the vehicle. In 8 per cent of such deaths, the victim was run over by the tractor, and in 5 per cent he was crushed between the tractor and another object. Three per cent of the tractor deaths resulted from entanglement, and 13 per cent from other and unspecified causes.

"Farming is one of the few occupations in which children are permitted to be close to operating machinery. It is no wonder, then, that one-third of the 306 fatal tractor accidents reported by Wisconsin and Ohio over a period of several years involved persons under 20 years of age. One case in ten involved a child under five years of age. Deaths among the very young often resulted from falls that occurred while the children were riding on tractors.

"One-third of the tractor fatalities in Minnesota and Iowa during 1949-51 occurred in highway accidents. Considering the small proportion of time that tractors are on the highways, the accident rate during this use is probably much higher than the rate during use on the farm.

"On the basis of corn harvest accidents in Iowa during 1952, it has been estimated that doctor and hospital costs per accident average $160, while the time lost averaged 30 days."

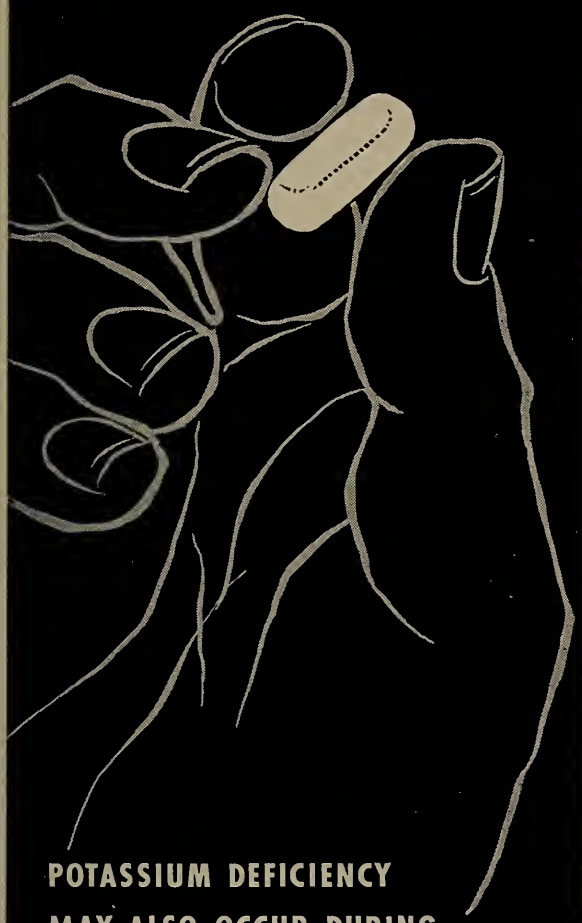
Farmers must be as accident conscious as their city friends, the editorial stressed. Since carelessness is responsible for most farm accidents, farmers must

(Continued on Page 24)

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Farm Accidents Caused by Individual Carelessness

(Continued from Page 22)

realize that caution is synonymous with common sense.

Rural physicians should point out safety facts and fallacies to farmers, as such advice is just as much preventive medicine as a vaccination against smallpox or the purification of drinking water, the editorial stated, adding:

"Most physicians are close to their patients and take a personal interest in their welfare. This relationship is even more pronounced in the rural areas, where the physician and the farm resident usually share more than a patient-physician affinity. Therefore, the rural physician is in an ideal position to proffer advice that may prevent farm accidents."

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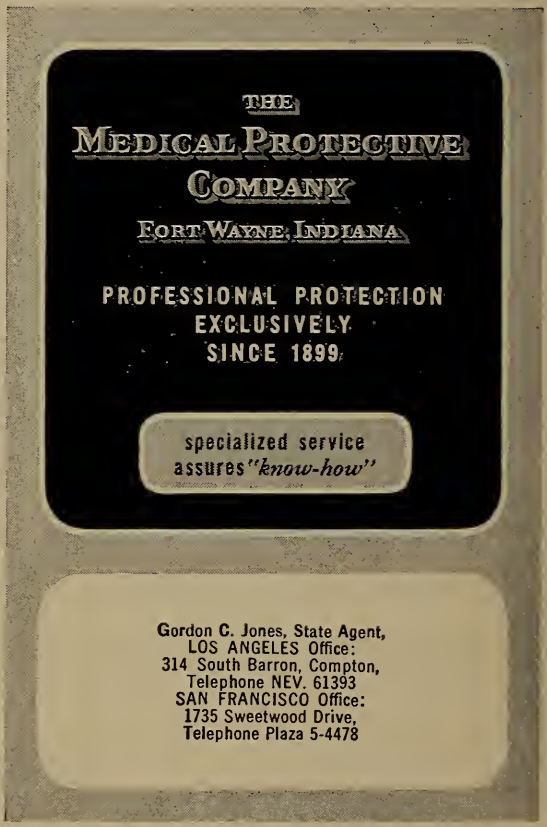
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Home Care Advantageous Over Hospitalization in Some Cases

Home care for the chronically ill and for children with chronic active rheumatic fever has many advantages over hospitalization, two articles in a recent issue of the *Journal of the American Medical Association* disclosed.

A 30-month study of 45 children with rheumatic fever showed that "when certain initial criteria for home suitability are met, most children with active rheumatic fever and free of congestive heart failure can be cared for as well at home as in the hospital, with an equally good end-result and with greater over-all advantage to the patient and his family." The study was made by Drs. Dennison Young, White Plains, N. Y., and Manuel Rodstein, New York City, who are associated with the division of social medicine and the medical division of Montefiore Hospital.

Dr. Louis Udell, Philadelphia, described a 39-month study of 160 chronically ill persons who were treated at home. Results indicated that "those who display readiness to cooperate in intensive care show improvement physically, emotionally or socially in situations formerly believed static or hopeless."

(Continued on Page 32)

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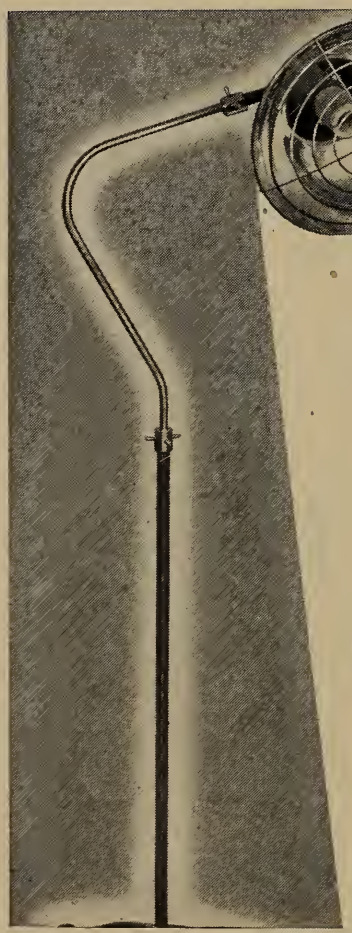
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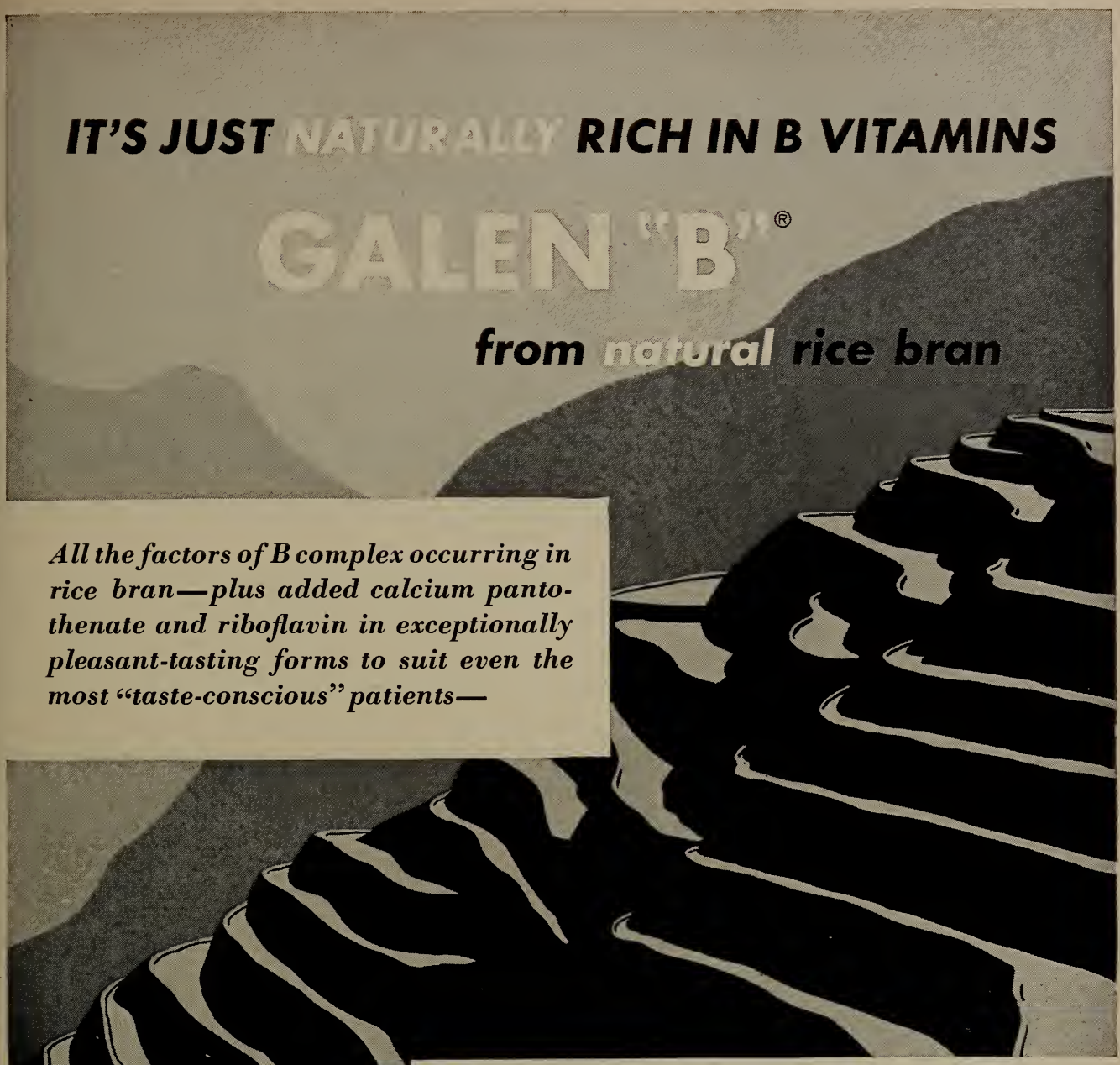
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Rare-Galen Division of White Laboratories, Inc., Kenilworth, N. J.

Home Care Advantageous Over Hospitalization in Some Cases

(Continued from Page 28)

"Many patients who do poorly in the hospital do much better in their home surroundings, eating the food that suits their palate, seeing their friends at any time, and being with their loved ones," Dr. Udell wrote.

The cost of the care of the patient at home is much less than the cost of caring for the patient in the hospital, he stated. In addition, home care will help alleviate the shortage of hospital beds.

VA Hospitalizing More Non-Service Connected Cases

Latest statistics from Veterans Administration show the agency is reducing its list of service and non-service connected cases awaiting hospitalization. In August 1952 service-connected cases waiting admission totaled 143. During July and August of this year they numbered only 2. At the same time VA is getting more and more non-service connected cases into its hospitals. In August 1952 VA listed as waiting hospitalization 22,341 cases it described as "other than disabilities adjudicated service-connected." By July of this year only 20,370 were still waiting treatment, and in August only 17,874.

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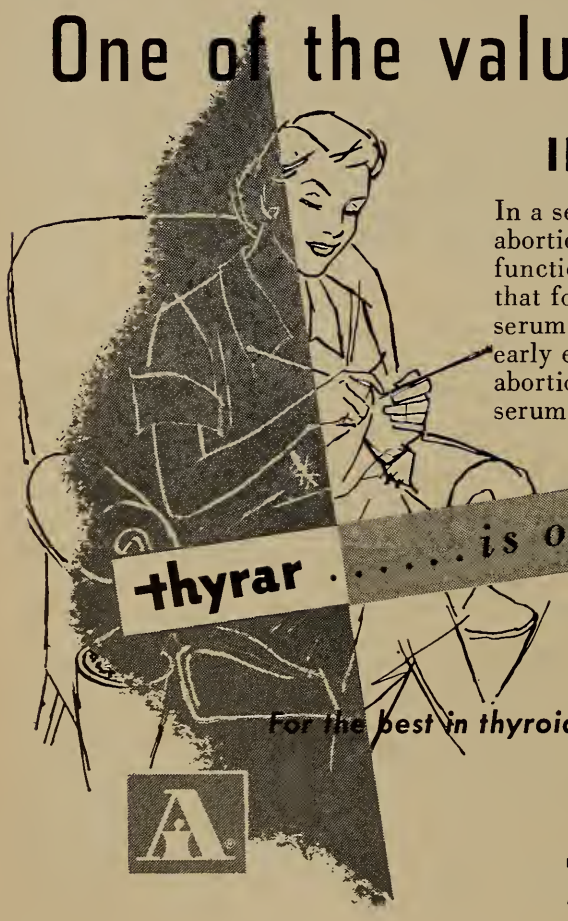
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(1) Perlmutter, M.: Metabolism 2: 81, 1953; (2) Jones, G. E. S., and Delfs, E.: J.A.M.A. 146: 1212, 1951; (3) Man, E. B., et al.: J. Clin. Investig. 30: 137, 1951.

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Antimalarial Drug Aids in Treatment Of Skin Disease

Preliminary studies have shown chloroquine diphosphate, an antimalarial drug, to be of value in the treatment of a serious skin affliction, discoid lupus erythematosus, according to an article in a recent issue of the *Journal of the American Medical Association.*

Discoid lupus erythematosus is a superficial inflammation of the skin marked by disk-like patches with raised reddish edges and depressed centers, and covered with scales or crusts. These fall off leaving dull-white scars.

Results of a four-month study of 14 patients suffering from the affliction who were treated with the drug were described by Drs. Leon Goldman, Donald P. Cole and Robert H. Preston, Cincinnati. Great improvement was noted in nine patients and some improvement in three; there was no change in the condition of two patients.

Although some toxic effects of chloroquine were noted, they were less than those of other antimalarial agents which have been used successfully to treat the condition, the doctors stated, adding:

"Preliminary clinical trials have shown chloro-

(Continued on Page 42)

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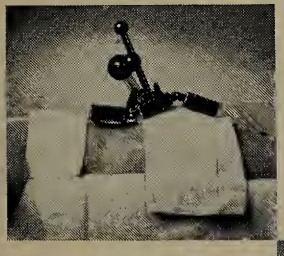
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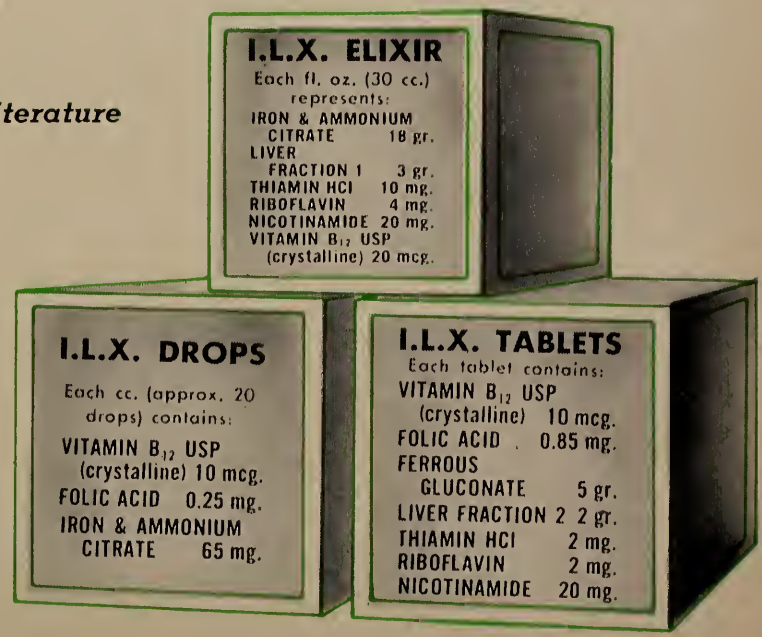
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Cardiac Women Can Now Bear Children with Greater Safety

Women with heart disease now can bear children with greater safety and expectations of success than ever before, in the opinion of Dr. James A. Brussel, Queens Village, N. Y.

However, cardiac women should know the risks involved in pregnancy complicated by heart disease, he wrote in a recent issue of *Today's Health* magazine, published by the American Medical Association.

"Perhaps the most difficult question any physician has to answer is that put to him by a woman with heart disease who asks if it is safe for her to have a baby," Dr. Brussel stated. "No single answer will apply to the thousands of such prospective mothers.

"Each case must be considered individually. Every factor—domestic as well as clinical—must be carefully weighed. No two problems are the same. After the doctor has made his diagnosis and informed the patient of the risks involved, the final decision must rest with the patient and her husband."

Heart disease complicates from one to three per cent of all pregnancies, Dr. Brussel pointed out. Ninety per cent of such complications is attributable to rheumatic fever; the remaining ten per cent includes high blood pressure, congenital cardiac defects, and syphilis. The death rate from heart disease complicating pregnancy would be even higher, he added, if statistics included women whose deaths occurred up to two years after childbirth rather than just those who died at or immediately following delivery.

Five well-established formulations regarding cardiac pregnancies were outlined by Dr. Brussel:

1. The patient's heart condition must be considered carefully by both the doctor and the patient. Heart patients with no or only slight limitation of activity because of the affliction should have little difficulty in completion of pregnancy. Heart patients with moderate or marked limitation of activity can be expected to suffer grave and potentially fatal complications.

2. Women over 30 who have heart trouble should be discouraged from becoming pregnant.

3. A definite threat to successful pregnancy is auricular fibrillation, a rapid twitching of the muscular wall of the auricle instead of the regular heart beat.

4. A patient whose heart is enlarged should be warned of the possible hazard in pregnancy.

5. A woman who is troubled with high blood pressure not only does poorly during pregnancy, but after delivery frequently goes on to suffer greater hypertension.

"Every cardiac pregnancy—even the seemingly very mild case—carries a certain risk," Dr. Brussel said. "Whether that risk becomes serious trouble or is kept to a minimum depends in large part on the patient's cooperation with her doctor and careful precautionary treatment. The woman with heart disease who wants to bear children can do so now with greater expectations of success than ever before."

Dr. Turner Now Council Secretary on Medical Education and Hospitals

Dr. Edward L. Turner, dean of the School of Medicine and chairman of the Division of Health Sciences of the University of Washington in Seattle since 1945, has taken over his new job as secretary of the A.M.A. Council on Medical Education and Hospitals.

He succeeds Dr. Donald G. Anderson, who left October 1 to become director of the medical center and dean of the School of Medicine of the University of Rochester.

Dr. Turner joins the A.M.A. family with an enviable record behind him. When he became dean of the Washington School of Medicine, he had no faculty, no classes, no buildings and no curriculum. He had only a mandate from the 1945 state legislature to develop a good professional school. Under his direction, the university's school of medicine became a leader in American medical education in the short span of less than eight years. Today the university has an outstanding teaching and research staff, a modern basic science building has been completed, the first unit of a teaching and research hospital is under construction, and four classes have been graduated.

In effecting the change at A.M.A. headquarters, Dr. Turner and Dr. Anderson spent two busy days together going over council activities.

Domestic problems associated with their new posts have presented both men with real estate and house-hunting problems as well as the challenge of getting acquainted with their new tasks. Don sold his home on the outskirts of Chicago but has not yet located a place for his family in Rochester. Dr. Turner has not yet sold his home in Seattle. Thus the wives are, in each instance, holding the "home front" while some of the preliminary hurdles of adjustment to new posts are being faced by the two men.

Dr. Turner expressed a keen interest in the opportunity of working with the numerous groups and organizations interested in medical education.

"It is obvious," he said, "that there are constant, intriguing challenges confronting those responsible for medical education today and it shall be a privilege to cooperate in developing opportunities to effectively meet them. The period ahead should be fascinating, indeed."

—The A.M.A. Secretary's Letter



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1. Grayzel, H. G., Helmer, C. B., and Grayzel, R. W.: New York St. J. M. 53:2233, 1953.
2. Heimer, C. B., Grayzel, H. G., and Kramer, B.: Archives of Pediatrics 68:382, 1951.
3. Behrman, H. T., Combes, F. C., Bobroff, A., and Leviticus, R.: Ind. Med. & Surgergy. 18:512, 1949.
4. Turell, R.: New York St. J. M. 50:2282, 1950

Antimalarial Drug Aids in Treatment Of Skin Disease

(Continued from Page 33)

quine diphosphate to be of value in the treatment of the chronic discoid phase of lupus erythematosus. This antimalarial agent is less toxic than quinacrine (Atabrine), but, with prolonged administration, the possibility of the occurrence of toxic symptoms must be considered."

The doctors are associated with the department of dermatology and syphilology of the University of Cincinnati College of Medicine.

FDA Has Reached No Conclusions on Boric Acid

The Food and Drug Administration is investigating the use of boric acid in infants' preparations, but has come to no conclusions, according to Associate Commissioner John L. Harvey. He said there was no plan to restrict distribution. Mr. Harvey said FDA was reappraising the subject of boric acid toxicity, and when all the facts are in, "hopes to be in a position to determine whether there is any necessity for label changes or other steps in order to adequately protect the public interest."

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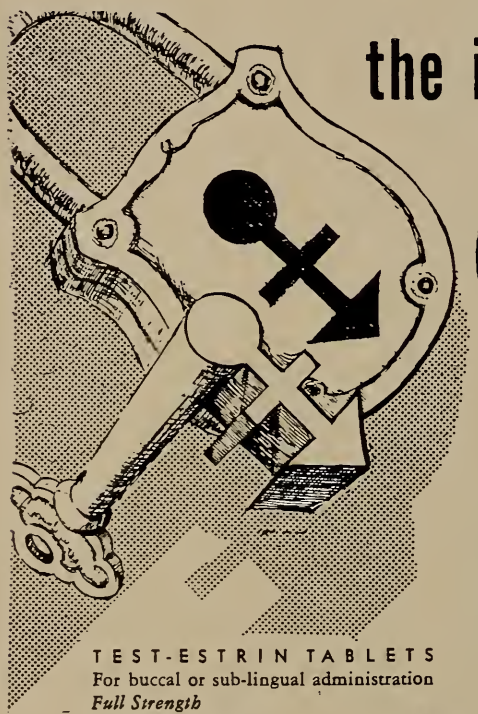
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†Fromer, J. L., and Cormia, F. E.: J. Invest. Dermat. 18: 1, 1952.

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TB Drug Aids in Treatment of Serious Fungous Infection

Isoniazid, a drug which has been used to treat tuberculosis, has proved of value in the treatment of actinomycosis, according to Drs. Leon V. McVay, Jr., and Douglas H. Sprunt, Memphis, Tenn.

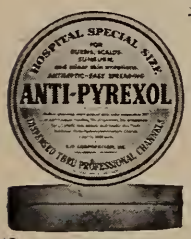
Actinomycosis, although a fungous infection, is similar in many respects to tuberculosis. Producing lesions of the bone or lung, the disease has a very high morbidity and mortality rate. It usually is acquired through the handling of infected cattle.

Three cases in which patients afflicted with actinomycosis recovered following isoniazid therapy were described by the doctors in a recent issue of the *Journal of the American Medical Association.*

The patients received approximately five times the amount of isoniazid that has been given to patients suffering from tuberculosis. No significant side effects to the drug were noted during the four- to ten-week periods the drug was administered, the doctors stated, adding:

"Whether a more prolonged course of therapy would have resulted in increased toxicity is uncertain. Obviously, until more is known concerning iso-

(Continued on Page 48)



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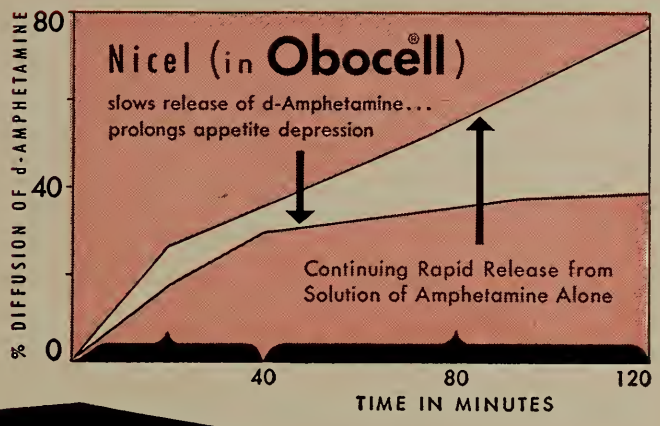
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TB Drug Aids in Treatment of Serious Fungous Infection

(Continued from Page 46)

niazid, patients receiving such dosage should be carefully observed.

"It is realized that the follow-up periods in the three cases reported in this study are quite brief and that prolonged observation is necessary. However, the studies and initial clinical results indicate that isoniazid is of value in the treatment of actinomycosis."

The doctors are associated with the division of medicine, pathology and bacteriology, University of Tennessee College of Medicine, and the John Gaston Hospital.

How to Define Systems of Government

During the recent A.M.A. Public Relations Institute held at Chicago's Drake Hotel, a number of speakers touched on everything from vitriolic excoriations in politics to the changing connotation of words. One speaker burst forth with a delightful definition of the systems of government. It went something like this:

Idealism. If you have two cows, you milk them both, use all the milk you need, and have enough left for your neighbors.

Socialism. If you have two cows, you keep one and give the other to the man next door.

(Continued on Page 49)

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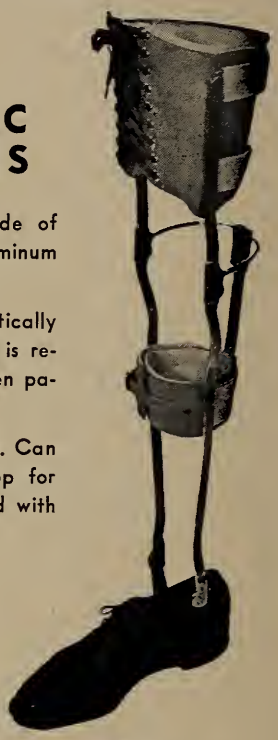
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How to Define Systems of Government

(Continued from Page 48)

Communism. If you have two cows, you give both to the government; then the government gives you back a little milk.

Imperialism. If you have two cows, you steal somebody's bull.

Capitalism. If you have two cows, you sell one and buy a bull.

New Dealism. If you have two cows, the government shoots one; you milk the other, then dump half the milk down the sink.

Nazism. If you have two cows, the government shoots you and takes the cows.

Realism. If you have two cows, they're both dry.

—The A.M.A. Secretary's Letter

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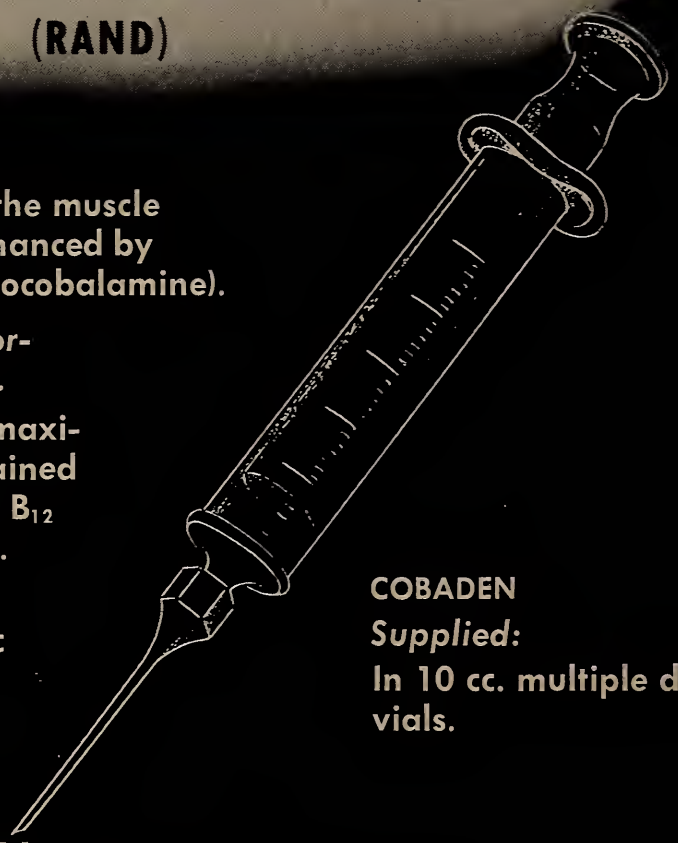
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Defense Department Issues Directive on Revised Doctor Draft

With the recent issuance of the Defense Department's directive to implement the revised doctor draft act, the three military services are prepared to put into effect all changes called for by the new law. The directive has been more than three months in preparation. Pending its official release, Army, Navy, and Air Force have delayed acting on a number of things, including the upward adjustment in grade for certain officers.

The directive restates much policy that has been in effect for some time, but also makes the following new points:

Grade: The law requires appointment, reappointment, or promotion to a grade "commensurate with professional education, experience or ability." The directive retains the present scale of grades, based on years of experience, and states that promotions must be given "at the earliest practicable date" to men now on active duty who qualify for higher grades. In effect, this means that a physician's experience alone will determine the grade in which he serves, whether he is on active duty now or is commissioned or recalled in the future. Eliminated are such limiting factors as shortage of higher grades in a table of organization, the arbitrary commissioning of Priority I and II men on the basis of cutoff dates, and delays pending action of officers' boards. (The following scale is used to determine grades: if less than four years' professional experience since graduation, first lieutenant; four but less than 11 years, captain; 11 but less than 18, major; 18 or more, lieutenant colonel; comparable grades in the Navy.)

National Guard: The regulations spell out more clearly the policy now in effect regarding the call up of medical officers in a National Guard or Air National Guard unit. If the physicians joined the unit prior to June 25, 1950, they are not subject to call unless the unit is called; otherwise they are now subject to call as individuals.

Regular and Special Registrants: Physicians registered under the regular draft as well as the doctor draft now may accept a medical commission in the reserves and await their call the same as any other doctor draft registrant. Until issuance of the directive the physicians registered in both drafts found their situations complicated. They had to volunteer for immediate active duty as a reserve officer or, technically at least, face the prospect of induction as an enlisted man through the regular draft channels. One reason for the change was the fact the services have no need for more doctor volunteers at this time.

Physical Standards: There is some change of wording regarding physical requirements, but the

(Continued on Page 62)

The N.N.R. monograph on Furadantin states:

"**Nitrofurantoin.—Furadantin (Eaton).—**

Actions and Uses.—Nitrofurantoin, a nitrofuran derivative, exhibits a wide spectrum of antibacterial activity against both gram-positive and gram-negative micro-organisms. It is bacteriostatic and may be bactericidal to the majority of strains of Escherichia coli, Micrococcus (Staphylococcus) pyogenes albus and aureus, Streptococcus pyogenes, Aerobacter aerogenes, and Paracolobactrum species. The drug is less effective against Proteus vulgaris, Pseudomonas aeruginosa, Alcaligenes faecalis, and Corynebacterium species; many strains of these organisms may be resistant to it. However, bacterial resistance to other anti-infective agents is not usually accompanied by increase in resistance of the organisms to nitrofurantoin. The drug does not inhibit fungi or viruses.

Nitrofurantoin is useful by oral administration for the treatment of bacterial infections of the urinary tract and is indicated in pyelonephritis, pyelitis, and cystitis caused by bacteria sensitive to the drug. It is not intended to replace surgery when mechanical obstruction or stasis is present. Following oral administration, approximately 40% is excreted unchanged in the urine. The remainder is apparently catabolized by various body tissues into inactive, brownish compounds that may tint the urine. Only negligible amounts of the drug are recovered from the feces. Urinary excretion is sufficiently rapid to require administration of the drug at four to six hour intervals to maintain antibacterial concentration. The low oral dosage necessary to maintain an effective urinary concentration is not associated with detectable blood levels. The high solubility of nitrofurantoin, even in acid urine, and the low dosage required diminish the likelihood of crystalluria.

Nitrofurantoin has a low toxicity. With oral administration it occasionally produces nausea and emesis; however, these reactions may be obviated by slight reduction in dosage. An occasional case of sensitization has been noted, consisting of a diffuse erythematous maculopapular eruption of the skin. This has been readily controlled by discontinuing administration of the drug. Animal studies, using large doses administered over a prolonged period, have revealed a decrease in the maturation of spermatozoa, but this effect is reversible following discontinuance of the drug. Until more is known concerning its long-term effects, blood cell studies should be made during therapy. Frequent or prolonged treatment is not advised until the drug has received more widespread study. It is otherwise contraindicated in the presence of anuria, oliguria, or severe renal damage.

Dosage.—Nitrofurantoin is administered orally in an average total daily dosage of 5 to 8 mg. per kilogram (2.2 to 3.6 mg. per pound) of body weight. One-fourth of this amount is administered four times daily—with each meal and with food at bedtime to prevent or minimize nausea. For refractory infections such as Proteus and Pseudomonas species, total daily dosage may be increased to a maximum of 10 mg. per kilogram (4.5 mg. per pound) of body weight. If nausea is severe, the dosage may be reduced. Medication should be continued for at least three days after sterility of the urine is achieved."

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Causes of Eczema Legion; Home Treatment Dangerous

Eczema has a thousand causes—from varnish to worry—and home treatment may just make it worse.

A tricky skin disease, eczema can be difficult to diagnose as to type and difficult to treat, according to Dr. Robert P. Little, Middlebury, Vt., and S. G. Mullins. Because of these difficulties, the patient, the druggist or the well-meaning friend may wrongly diagnose the type, proffer the wrong treatment and cause the affliction to become more serious than at first. Therefore, a person so afflicted should seek the advice of a dermatologist.

There are seven types of eczema known today, the authors wrote in a recent *Today's Health* magazine, published by the American Medical Association:

1. Nonsensitization eczema is caused by physical or chemical injury. It can result from exposure to light, heat, cold, friction or strong chemicals. Most frequently it is found on the exposed parts of the body where the skin might be rubbed.

2. Sensitization or contact eczema always results from contact with a substance or substances to which the skin has become allergic or sensitized by previous exposure. This is the commonest form of eczema—the type from which workmen and housewives most frequently suffer.

3. Infectious eczema is almost always secondary to some infection, and occurs when the skin is damaged by pus and the cells have become sensitized or irritated by bacteria or bacterial toxins.

4. Varicose eczema is associated with poor circulation of the blood, often combined with infection.

5. Atopic eczema, a form of neurodermatitis, is most frequently found in people under 20 years of age although adults are by no means immune. It generally begins in childhood and often is associated with hay fever and asthma.

6. Nummular eczema is found chiefly in adults. Although the exact cause is unknown, it is associated with an unquiet, worried mind.

7. Infantile eczema is seen most often in babies under one year of age, and is the result of allergy to food or things in a baby's environment such as clothing or objects he touches.

"All forms of eczema may be either acute or chronic, and they may be further aggravated by external irritants other than the specific original cause," the article stated.

"All too often the type of eczema is wrongly diagnosed by the patient, the druggist or well-meaning friends. The numerous ointments and lotions applied only serve, in most cases, to worsen the disease, so that the last stages of eczema are more serious than the first.

"The best and most important advice you can follow is negative: 'Beware of drugstore or home remedies and treatments.' Put yourself in the hands of a qualified dermatologist."

Number of Interns and Residents In Hospital Training Doubled

Twice as many interns and resident physicians today are completing their training and furthering their education through hospital work as there were prior to World War II. During the year 1952-53, there were 7,645 interns and 16,867 resident physicians on duty in the nation's hospitals, compared to a total of approximately 12,000 in 1940.

This was disclosed in the 27th annual report on internships and residencies in the United States, prepared by the Council on Medical Education and Hospitals of the American Medical Association. The report appears in a recent issue of the *Journal of the American Medical Association.*

To make certain that the American people obtain the best medical care, the A.M.A., through its Council on Medical Education and Hospitals, accredits only those hospitals for the training of physicians that meet set educational and clinical standards.

It is significant to note, the report pointed out, that the number of hospitals offering approved intern training has increased 12 per cent during the last 10 years, from 760 to 856, while the number of internships available has risen 32 per cent, from 8,180 to 11,006.

Of the total number of internships offered, 9,497, or 90 per cent, were rotating internships, an increase of 6 per cent over the previous year. Rotating internships are those in which the intern spends two or more months in each of the major divisions of medicine — internal medicine, surgery, obstetrics-gynecology, and pediatrics. This type of internship training is primarily designed to prepare a physician for the general practice of medicine. If a physician decides to enter a specialty, he must take from two to four additional years of hospital training in his specialty. This is known as residency training.

As of September 1, 1952, there were 7,645 interns on duty, 1,300 to 1,400 of whom were graduates of medical schools outside the United States. The majority of state examining boards require foreign medical school graduates to have a year's internship in an accredited American hospital prior to taking state board examinations to obtain a license to practice medicine.

Federal hospitals accounted for about 6 per cent of the interns on duty, other governmental institutions for 36 per cent, and nongovernmental hospitals for 58 per cent.

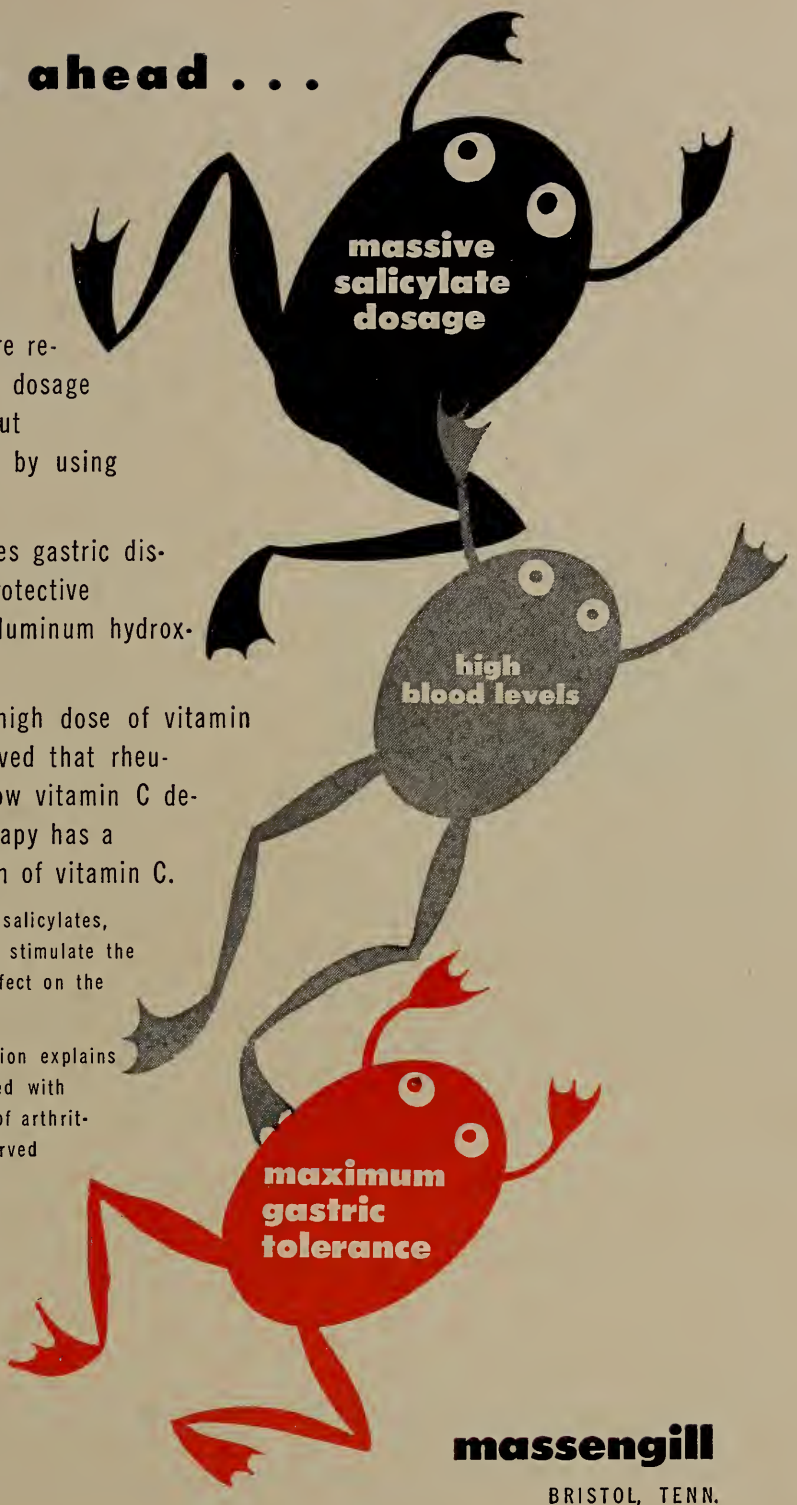
During the year 1952-53, there were 4,635 residency programs conducted in 1,131 hospitals approved by the A.M.A. A total of 22,292 residency positions were available in these hospitals, 10,285 being first year appointments, the report said.

The residency occupancy rate for all types of hospitals last year was 76 per cent, the report stated. There was a total of 16,867 residents, 7,777 of whom were first year appointees. During the prior year,

(Continued on Page 62)

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*Proceedings Soc. Exp. Bio. Med., 1952, v80, 51-55, G. Cronheim, et al.

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Defense Department Issues Directive on Revised Doctor Draft

(Continued from Page 52)

principle is the same. The directive declares: "All physicians . . . are considered to be potentially acceptable for military service provided they can reasonably be expected to be productive in the Armed Forces. . . . No person with limited physical capabilities will be assigned by the military departments to duties which are beyond the limitations imposed by their physical capabilities."

NOTE: In September the Defense Department said the drafting of physicians would be suspended indefinitely; the prospect is that no more calls will be made at least until well into next year.

—A.M.A. Washington Letter

Number of Interns and Residents In Hospital Training Doubled

(Continued from Page 58)

there were 15,851 residents, 6,376 of whom were first year appointees.

During the last 10 years there has been a marked increase in the number of residents entering certain specialty fields, reflecting the increased demand by the public for the services of these specialists. Considering first year appointments only, last year the largest number of residents, 1,533, entered the field of psychiatry. Internal medicine, with 1,352 residents, was second, and general surgery, with 1,256, was third. The report was prepared by Dr. Edward H. Leveroos, director of the division of hospitals and graduate education of the council, and Mr. Warren R. von Ehren, administrative assistant to the division. Both are of Chicago.



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California MEDICINE

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14,501 Deliveries With No Maternal Death

STIRLING PILLSBURY, M.D., Long Beach

• In 14,501 deliveries at one hospital there have been no maternal deaths. Several factors have contributed to this eight-year record:

1. Immediate availability of blood and liberal use in anemia and in abnormal bleeding has prevented deaths from hemorrhage.

2. Antibiotics and early ambulation have reduced infections.

3. Spinal anesthetics reduce hemorrhage and allow for greater flexibility in combating complications at delivery.

4. Consultations are required for certain complications, are freely available in all cases, and give the advantage of two opinions instead of one.

5. Good nursing care is essential.

MATERNAL MORTALITY throughout the United States has been reduced from 79.9[1] per 10,000 births in 1920, to 20[1] in 1945, and to the low figure of 7 in 1952. Physicians are striving, however, to reduce this percentage still further.

During the last eight years, from 1945 to 1953, 14,501 mothers have been delivered at Seaside Memorial Hospital in Long Beach without a single maternal death from obstetrical or any other cause. Seaside Memorial Hospital is a 370-bed general hospital, with a 40-bed obstetrical service. The patients were cared for by more than 118 physicians, 35 of whom were interns. The 14,501 deliveries include 731 cesarean sections, an incidence of 5 per cent.

The average maternal death rate throughout the United States for this same period was 12.9[1] per 10,000 births, or 18.7 deaths in 14,501 deliveries. Although the maternal mortality rate for any hospital should be lower than for the United States as a whole, nevertheless 14,501 births with no deaths indicates salvage of several mothers more than the average.

The hospital staff believe that several factors have contributed to this record:

Combating of hemorrhage, the principal cause of maternal death, by preventive measures and by replacement of lost blood. During the first three years included in this report blood was obtained from commercial sources in fair amount and was nearly always available when needed; during the last five years the American Red Cross has maintained an adequate supply. In 1952, 285 pints of blood were used in the obstetrical department, an average of 13 units per 100 deliveries. One patient alone received 19 pints.

Blood type and cross-matching tests are made immediately on all obstetrical patients admitted for cesarean section or with more than average bleeding, and in such cases blood is readied for immediate use. Physicians are urged to give transfusions to all severely anemic patients before or after delivery.

Use of antibiotics for infection, which is the second most important cause of maternal death. Antibiotics are given in large doses on significant rise in

Presented before the Section on Obstetrics and Gynecology at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

Statistics for this presentation were compiled by N. J. Thysell, M.D.

temperature without waiting to make a definite diagnosis. This practice may be unscientific, but it has had the desired effect.

Special treatment of toxemia, third among fatal conditions in childbirth. In all cases of toxemia the physician is required to consult with one of the obstetrical committee, and usually is requested to consult with the medical staff also. Pregnant patients with mild toxemia are assisted to carry their babies as near to term as possible in the hope of obtaining a viable child. In more severe toxemia glucose (usually in 5 per cent solution) is given intravenously and sedation is effected with one of the barbiturates, morphine and magnesium sulfate. If there is no improvement in toxemia the uterus is emptied by the safest method. Convulsions are usually controlled by the intravenous administration of barbiturates, and oxygen is given; the uterus is emptied by the safest route as soon as the patient's condition permits. As prenatal care improves toxemia occurs less frequently.

Postpartum toxemia is in many cases observed early by the nursing staff, who determine blood pressure frequently. The condition is controlled with sedation and dietary measures. The newer antihypertensive drugs have not been used, but these should be seriously considered.

Early ambulation, first practiced in 1946, has become increasingly accepted until at present few patients are confined to bed more than 12 hours after delivery. This measure, by stimulating the circulation, has reduced the incidence of infection, especially in the pelvis, lungs and legs. Thrombosis is extremely rare, and there has been no proven occurrence of embolism in the cases covered by this report.

Low spinal anesthesia or saddle block was begun in 1946 and has been used in an increasingly large proportion of cases (31 per cent in 1947, 48 per cent in 1950-52). In most cases spinal anesthetic is given by an anesthetist. It is required that a physician, other than the attending obstetrician or a member of the house staff, be in attendance after the anesthetic has been given. This rule at first caused some objection, mainly because of the added charge, but it has been rigidly applied and has become quite well accepted in the last few years. There is grave danger in leaving unattended a patient under any major anesthesia.

Spinal anesthesia, supplemented by the use of sodium pentothal or gas following delivery, has been used in 92 per cent of the cesarean sections included in this survey. No serious complication has resulted from spinal anesthesia in over 5,000 deliveries in which it was used, and no financial liability has been incurred.

Experience with spinal anesthesia indicates these advantages: The mother is completely relieved of pain. The baby is less in danger of anoxemia. Uterine contractions are not affected, and therefore there is less likelihood of hemorrhage. The birth canal is more relaxed so that the baby can more easily be delivered and complications that may arise can be more easily overcome. The possibility of inhalation pneumonia is eliminated. Regarding this last danger, Hingson[2] in 1951 reported 59 maternal deaths due to aspiration pneumonia following inhalation anesthesia and estimated that 2 per cent of all maternal deaths are due to this cause. Ether anesthesia administered by a nurse is still common at Seaside Memorial Hospital but is not regarded as a procedure of choice.

Consultation, required in certain circumstances and freely used regarding any abnormality, is of prime importance in the prevention of serious complications. In the cases here reviewed, almost 55 per cent of the patients were cared for by general practitioners or interns; all physicians, however, must obtain written permission from a member of the obstetrical consultation committee for high forceps delivery, cesarean section, induction of labor by mechanical means, or internal podalic version. This rule not only prevents physicians from attempting procedures for which they are not qualified but also assures another opinion as to the advisability of the procedure considered. It is to be noted that neither high forceps delivery nor internal podalic version has been done in the last five years. Induction of labor by mechanical means merely for the patient's or the physician's convenience is not permitted.

Consultation with a member of the committee is also required in all cases with excessive hemorrhage either before or after birth, reduction of hemoglobin to less than 50 per cent of normal, thrombosis, hypertension with systolic blood pressure over 160 mm. of mercury, convulsion, fever of 102.6° F. or higher lasting more than 24 hours, obstruction to delivery, or prolonged labor.

The obstetrical consultation committee consists of five members who are either diplomates of the American Board of Obstetrics or eligible for the diploma. No charge is made for obligatory consultations, and rarely is there a charge for assistance by one of the committee at delivery. Both specialists and general practitioners have recognized that the primary interest of the committee is in the welfare of the patient, and this recognition has resulted in a very friendly and cooperative atmosphere in the obstetrical department.

The nursing staff must be given full credit for their share in saving lives. They are constantly on the alert for abnormal signs and symptoms, checking blood pressure as each patient is brought to a labor

room, during labor, and after delivery, and observing bleeding, the height of the fundus and other indications.

117 East Eighth Street.

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1. U. S. Summary of Vital Statistics, Vol. 36, No. 22, Sept. 10, 1952.

2. Hingson, R.: Research in Anesthesia and Analgesia, 30:121, May-June 1951.

***Discussion by* DONALD A. DALLAS, *M.D.*, San Francisco**

On hearing the original title of this presentation, "13,000 Deliveries Without a Maternal Death," I assumed that it meant 13,000 deliveries without an obstetrical death. When I found that it meant—at the latest figure—14,501 consecutive deliveries without a death from any cause, I must admit that I was skeptical.

To those of us who have been active in obstetrics for more than 25 years, this report seems almost incredible. Twenty years ago an analysis of 14,501 consecutive deliveries in a general hospital would almost inevitably have reported at least 45 maternal deaths.

I will present for comparison the maternal mortality statistics from the hospital in which I do most of my work. In The Hospital for Women and Children in San Francisco, 13,509 patients have been delivered in the last six years. Of these, approximately 11,000 were private patients and 2,500 were clinic patients. Most of the private patients were cared for by specialists, a small percentage by general practitioners. The clinic patients were delivered by the house staff under supervision. Consultation is not required but is frequently made use of. All anesthetists are physicians. Continuous caudal and low spinal anesthesia are widely used, general anesthesia less so. Blood is constantly available in the hospital. The nurses are well trained, conscientious, and adequate in number. The type of obstetrics practiced is largely operative; 75 per cent of the deliveries are by forceps, 10 per cent by cesarean section, 12 per cent are spontaneous, and 3 per cent are by breech extraction.

There were five maternal deaths in this series of 13,509 consecutive deliveries. Only one of the five was an obstetrical death. Surprisingly, three of the others were due to spontaneous subarachnoid hemorrhage and one to acute anterior poliomyelitis.

***Discussion by* DONALD G. TOLLEFSON, *M.D.*, Los Angeles**

As the author points out, hemorrhage must be treated early and adequately as it is the chief cause of death. It would be interesting to know how many cases of placenta previa and of abruption of the placenta were treated by cesarean section in the series reported.

Treating the infection early with antibiotics and undoubtedly the use of them in the long labor with early rupture of the membranes have solved the third most serious cause of death in childbirth.

Great emphasis should be placed on the early interruption of pregnancy for toxemic patients who do not respond to treatment.

The use of low spinal or saddle block in 48 per cent in the last part of the series is very high, but no morbidity or complications resulted. Insurance underwriters take note. Emphasis on the need for a physician other than the obstetrician to watch the patient should be required in all obstetrical departments.

The only point which might be open to question is whether spinal anesthesia helps to avoid anoxia in the child.

Peripheral Arteriosclerosis

Present Concepts of Management

EDWIN J. WYLIE, M.D., and RICHARD E. GARDNER, M.D., San Francisco

• Three hundred patients with clinical manifestations of ischemia due to peripheral arteriosclerosis were studied. An accurate demonstration of the extent of the arterial occlusive process by means of aortography was of major importance in determining therapy and prognosis.

The results from thromboendarterectomy to restore the arterial lumen in cases of segmental thrombosis or stenosis greatly exceeded those obtained from other methods of therapy for peripheral arteriosclerosis. The indications for and the limitations of lumbar sympathectomy as a palliative procedure are described. Medical treatment, except for the use of specific protective measures, was of little value in altering either the symptoms or prognosis.

RECENT DEVELOPMENTS in the diagnosis and treatment of arteriosclerosis as it pertains to peripheral vascular disease have altered many of the former concepts concerning the management of patients with this disease.

The necessity for precise methods of diagnosis based on an accurate definition of pathological changes has been recognized as the principal requisite in the management of any disease. Many of the former studies on the therapy of peripheral arteriosclerosis were necessarily empiric in their approach, owing to the lack of such methods. The recent extensive use of arteriography to demonstrate the degree and location of alterations in the flow of blood has supplied valuable information to guide both the diagnosis and the treatment of the varied peripheral ischemic manifestations of arteriosclerosis. Coincident surgical advances, aided by the information supplied by arteriography, have shown that definitive operative procedures are possible to restore normal blood flow through occluded arteriosclerotic arteries.[1, 4] The longer cumulative experience with the recognized palliative types of therapy has also tended to integrate theoretical concepts with clinical results.

During the recent five-year period in which many of the former concepts of the management of peripheral vascular disease have undergone revision, 300 patients with peripheral arteriosclerotic vascular disease were studied at the University of California Hospital and the San Francisco Hospital. The current ideas governing the management of peripheral arteriosclerosis are presented on the basis of this experience.

Over the period of the study, arteriography became the most important adjunct for the appraisal of ischemic syndromes resulting from peripheral arteriosclerosis. Inasmuch as the clinical significance of arteriosclerotic obliterative disease primarily concerns the arteries supplying the lower extremities, an adequate technique for the demonstration of these vessels was necessary. A modification of the formerly described methods of translumbar aortography has been found to be the most satisfactory for this purpose (Figure 1). The objective was to demonstrate clearly the sites of arterial disease, the portion of the arterial tree involved by significant disease, and the nature of collateral pathways.* For adequate visualization it was found necessary to use a large volume of contrast solution (50 cc.) and to inject it rapidly. This is of particular importance if there are multiple levels of occlusive lesions. It is recognized also that accurate evaluation of the prognosis and operability requires a demonstration of the full length of the arterial tree from the level of the diaphragm to the lower legs (Figure 2).

Aortography has been used extensively for only the past two years, during which time 155 aortograms have been performed. In 68 of the patients thus studied, later surgical exploration permitted the confirmation of the x-ray findings. These observations, combined with observations on the clinical progression of the ischemic states, have made it possible to define separate categories of peripheral ar-

From the Division of Surgery and the Vascular Clinic, University of California School of Medicine.

Presented before the Section on General Surgery at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24 to 28, 1953.

*The technique currently employed is as follows: The patient is placed prone over a cassette tunnel in which slots are provided for two 14- by 17-inch Lysholm wafer grids and a 14- by 36-inch cassette. The x-ray tube is fitted with a rectangular cone and an aluminum filter tapered to permit equal penetration of the abdomen and the less dense extremities. Under general anesthesia, two 17-gauge, 7-inch needles are inserted, one inch apart, into the abdominal aorta proximal to the celiac axis. Fifty cc. of 70 per cent Diodrast, or 70 per cent Urokon, divided between two syringes, is injected manually over a 4-second interval through the two needles. Four 36-inch films are exposed serially over an 8-second interval. The x-ray factors for the average patient are 81 kv, 400 ma, and 1/5 second, at a distance of 6 feet.

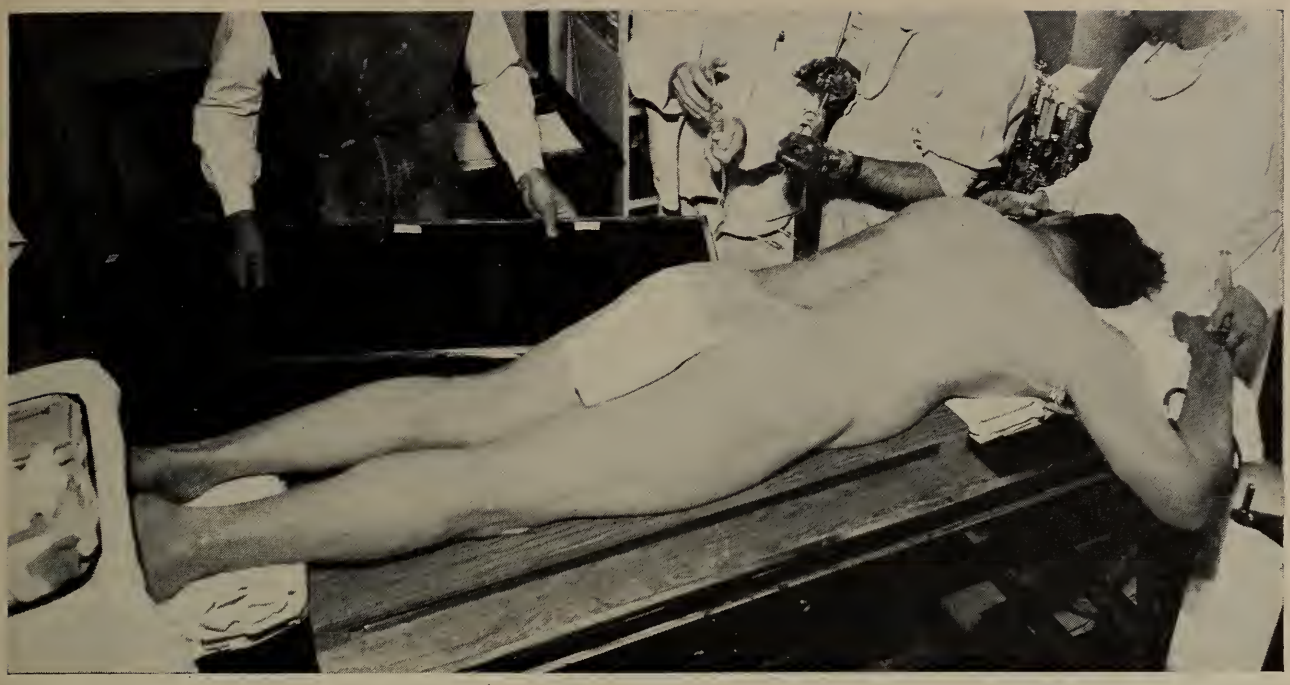


Figure 1.—Photograph illustrating the method of translumbar aortography used in the diagnosis of the extent and localization of arterial abnormalities between the level of the upper abdominal aorta and the popliteal arteries.

teriosclerosis and to correlate the signs and symptoms in each category with specific types and levels of arterial occlusions.

On the basis of the clinical and arteriographic studies, two categories of peripheral arteriosclerosis may be differentiated, depending upon the size of the artery involved and the extent of the occlusive process. These are: (1) segmental arterial thrombosis or stenosis; and (2) diffuse arterial thrombosis or stenosis. The therapy and prognosis vary in each category. In each, the basic lesion is complete or nearly complete arterial occlusion. Arteriosclerosis of the arterial wall, without obstruction to flow of blood, does not appear to be significant in the production of peripheral ischemia. In 96 per cent of the 300 patients, the principal impediment to flow of arterial blood was obstruction of arteries the size of the popliteal artery or larger. In most of these patients, there was relatively little obstructive involvement of the smaller arteries. Significant ischemia, solely as a result of occlusion of arteries distal to the popliteal artery, was observed in only 12 patients.

SEGMENTAL ARTERIOSCLEROSIS

The characteristics of localized segmental arteriosclerosis have only recently been studied and are of particular significance in view of the feasibility of direct surgical approaches to restore normal blood flow. Aortography has shown that approximately one-half of the patients with occlusion of arteries proximal to the popliteal artery have thrombotic occlusion that is limited to a segment of the major arterial tree. It must be acknowledged, however, that the fact that the authors have particular interest in this type of peripheral arteriosclerosis may have attracted a disproportionate number of patients in this category. The clinical and operative experiences previously reported with occlusions of this kind have suggested that the following is the mechanism in the segmental limitation of arterial occlusion:[2] The early arteriosclerotic lesion is a short zone of intimal thickening which, as it increases in depth, gradually encroaches upon the arterial lumen. This is most commonly observed near the orifice of a major arterial branch. Dilatation of the collateral vessels bypassing the stenotic zone is frequently observed in arteriograms taken at this stage. When complete occlusion develops in the stenotic segment, the static column of blood proximal and distal to the level of occlusion clots as far as the level of major arterial branches. Arteriograms taken at this time usually show filling of a major collateral artery at the proximal level of occlusion and a return flow of blood into the thrombosed artery at the lower level of occlusion by reverse flow through the distal collateral artery. Occlusions in the aorta, iliac, and common femoral arteries tend to remain localized to a short arterial segment because of the short distance between large arterial branches and the size of these branches. For the opposite reason, occlusions of the superficial femoral artery tend to be lengthy, extending from the profunda femoris to the popliteal artery. An additional observation has been that, with occlusion at the aortic and iliac levels, significant arteriosclerotic changes at lower levels are rare; with occlusion at

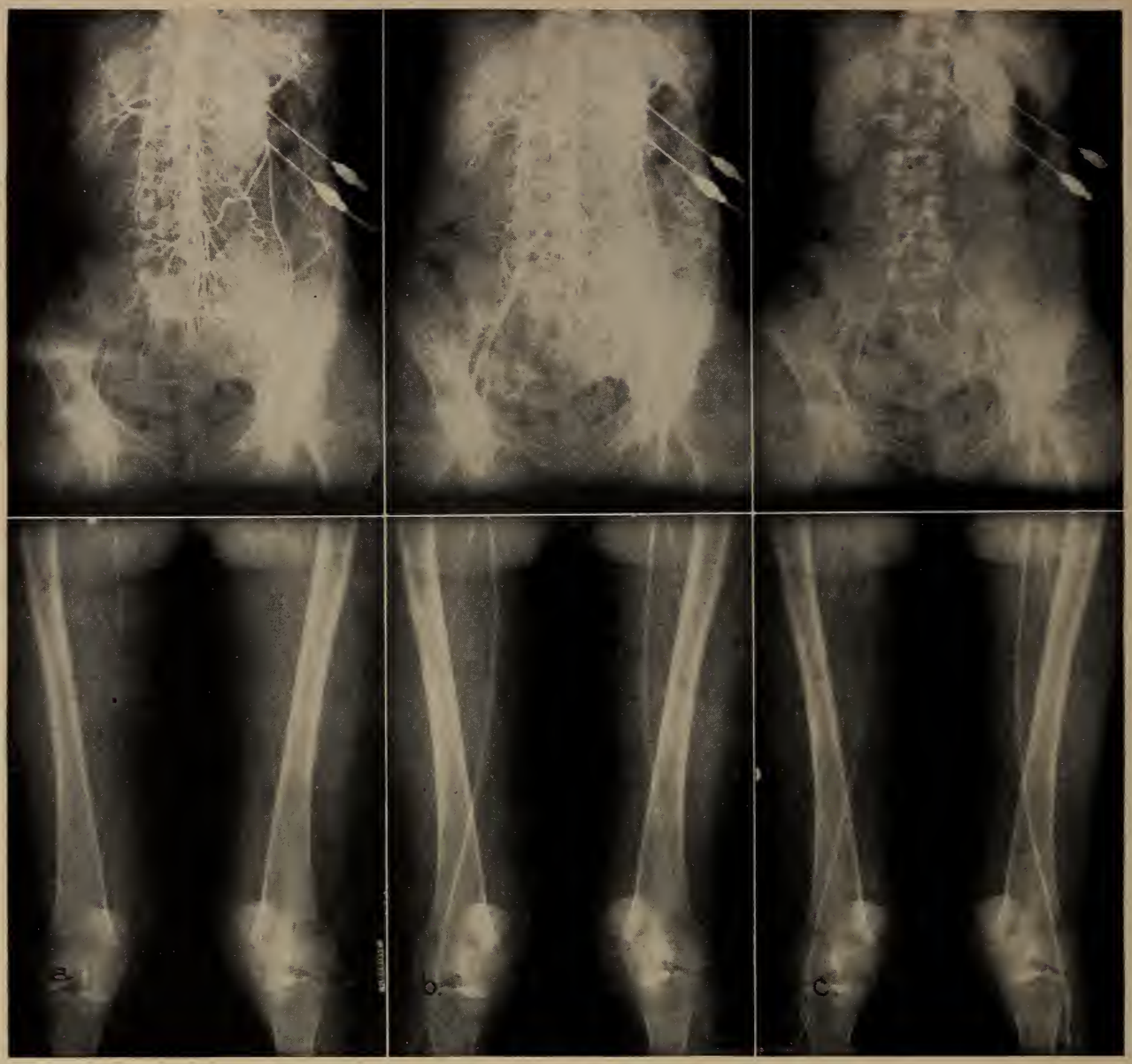


Figure 2.—Serial aortograms exposed at two-second intervals. The patient was a 43-year-old woman with segmental arteriosclerotic thrombosis of the terminal abdominal aorta and common iliac arteries. Note the collateral filling of the external iliac arteries by way of the hypogastric arteries (*B*), and the absence of significant luminal irregularities or narrowing in the distal arterial tree (*C*).

the femoral level, arteriosclerotic changes both proximal and distal to the occluded segment are frequent.

The average age at onset of ischemic symptoms in a series of 58 patients upon whom operation has been performed for segmental arteriosclerotic stenosis or thrombosis has been found to be considerably less than was formerly recognized in peripheral arteriosclerosis.

The tabulation of their ages by decades follows:

Ages	Number of Patients
30 to 39	7
40 to 49	22
50 to 59	21
60 to 69	7
70 to 79	1
Total patients	58

Twenty-nine of the patients (50 per cent) were under the age of 50. The level of the diseased arterial segment was above the external iliac artery in 43 patients. In this latter group considered alone, 25 (58 per cent) were under 50 years of age and 6 (14 per cent) under 40 years of age. The youngest patient was 30 years old.

A presumptive diagnosis of the level and extent of segmental arterial stenosis or thrombosis may usually be made from the history and physical findings. Occlusion of the superficial femoral or popliteal arteries is associated with claudication in the calf. Occlusion of the common femoral and external iliac arteries may also cause claudication in the calf but, due to the interference with flow of blood through

the profunda femoris, symptoms in the thigh musculature are produced. Symptoms at the thigh level are rarely those of pain. The more common complaint is muscular fatigability or weakness, produced by walking and relieved by rest, and usually localized to the posterior muscle groups of the thigh. Occlusion at the common iliac level produces, in addition to thigh fatigability, similar symptoms in the gluteal muscles. Pain in the low back and hip, after exercise, may also be complained of. These symptoms are believed to arise from decreased flow of blood through the hypogastric artery. In males, when the obstruction is bilateral, either from bilateral common iliac or aortic occlusion, impotence is almost universal. This is characterized by inability to attain or to maintain penile erection. In both sexes, hypesthesia in the perineal area following exercise is an occasional complaint. The diagnosis of arterial occlusive disease when it occurs at the level of the aorta or iliac arteries is often overlooked. This has been due to the relative youth of the patients and the dissimilarity of their complaints to those usually attributed to arteriosclerotic vascular disease.

Stenosis of a major artery, which is believed to be an intermediary stage in the development of arterial thrombosis, may also produce symptoms similar to those described above. Faintly palpable pulses may be detected in the arteries distal to a complete occlusion. This is most often observed with occlusions at the aortic or iliac level. In the presence of stenosis alone at this level, the peripheral pulses are stronger and are associated with an audible bruit over the femoral artery. Abnormal blanching of the foot on elevation of the leg is characteristic of lesions of both types.

Arterial stenosis sufficient to produce symptoms of ischemia has been found to indicate narrowing of the arterial lumen to less than 10 per cent of the normal size.[2] In six of 26 patients discovered to have segmental arteriosclerotic stenosis, the condition progressed to total occlusion over an observation period after the diagnosis was established by aortography. For these reasons, it is believed that the early recognition of arterial stenosis is of particular importance when symptoms of peripheral ischemia are apparent.

An accurate diagnosis in cases of segmental arteriosclerotic disease has special therapeutic significance. Thromboendarterectomy, an operation originally described by dos Santos of Lisbon, makes it possible to reestablish normal circulation in cases of segmental arteriosclerotic thrombosis or stenosis. This operation is based upon the observation that it is feasible to remove the diseased interior of an artery that is thrombosed due to arteriosclerosis and to use the preserved outer coat of undiseased media



Figure 3.—Aortogram of a 51-year-old man showing arteriosclerotic stenosis of the common iliac arteries. This patient complained of bilateral thigh and gluteal fatigability limiting his walking tolerance to one-half block, and of sexual impotence. All symptoms were relieved following endarterectomy.

to reconstruct a functioning artery. Experience with this operation on the University of California Surgical Service was initiated by animal experiments, and the operation was first successfully carried out in a human patient in January 1951.[3] Since that time, thromboendarterectomy has been performed on 58 patients. The operative technique was described in a previous report.[1] Results with respect to the restoration of arterial patency are shown in Table 1, and clinical results in Table 2.

Forty-two patients were significantly improved as a result of operation. In 35, the pedal pulsations were restored to normal volume and all symptoms and signs of ischemia relieved. Of 15 patients with

TABLE 1.—*Operative results of thromboendarterectomy—58 cases*

Level of Thrombosis	Number of Cases	Pedal Pulsations Restored After Operation	Distal Thrombosis Present Before Operation	Distal Thrombosis Appeared After Operation	Postoperative Thrombosis at Zone of Resection	Post-operative Deaths
COMPLETE OCCLUSION:						
Aorta and Iliac	15	11	1	1	1	2
Aorta, Iliac and Femoral	1			1		
Iliac	8	7	1			2
Iliac and Femoral	3	1	1		1	1
Femoral	14	10	2	1	1	2
INCOMPLETE OCCLUSION:						
Aorta and Iliac	16	11	3	1	1	
Femoral	1				1	
TOTAL	58	40	8	4	5	7

TABLE 2.—*Clinical results of thromboendarterectomy*

	Pedal Pulsations Restored	Distal Thrombosis Present Before Operation	Distal Thrombosis Appeared After Operation	Post-operative Thrombosis at Zone of Resection
Improved	35	5	2	0
No change		0	0	5
Amputation		2	1	0
Died	5	1	1	0
Total	40	8	4	5

impotence due to aortic or iliac occlusion, 12 reported restoration of sexual potency. Five of the patients in the "improved" group had arterial occlusion distal to the operative area before operation. Decision for operation in such cases was based upon the possibility of improving the supply of blood to the extremity by relieving the more proximal obstruction. Thrombosis distal to the operative area developed during operation in two patients, but the continued patency of the larger proximal arterial segment caused definite improvement in supply of blood to the involved extremity. Thirty-two of the patients have been followed for over one year after operation and 11 for over two years. The immediate result has been sustained in all but two patients; they had segmental femoral thrombosis and arterial occlusion developed one year after operation. Both patients had been shown by x-ray to have diffuse arteriosclerotic changes before operation, as evidenced by multiple luminal irregularities in the patent major arteries. In four patients, areas of peripheral gangrene healed; and in four pain during periods of rest disappeared. Many of the patients in this group had been treated previously by medical measures or by lumbar sympathectomy. The circulatory improvement following thromboendarterectomy in patients with segmental arterial thrombosis greatly exceeded that obtained from any of the other methods of treatment.

In five patients, thrombosis developed at the zone of resection within the first hour after operation,



Figure 4.—Serial aortograms (*A* and *B*) of a patient with segmental thrombosis of the aorta and iliac arteries. Following thromboendarterectomy, pedal pulses were restored and all symptoms relieved. Aortography four months after operation (*C*) showed a normal arterial lumen.

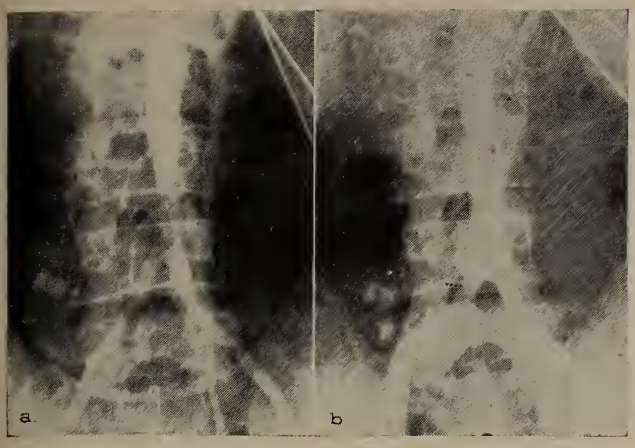


Figure 5.—Aortograms of a 46-year-old man with symptomatic stenosis of the terminal aorta before (*A*) and after (*B*) endarterectomy. (Figure 5 used by permission of *Surgery, Gynecology and Obstetrics.*)

resulting in a return to the preoperative status. Improved methods of anticoagulant therapy have minimized this hazard in later operations. Two of three patients upon whom amputation was later performed had distal gangrene prior to operation and had been shown to have multiple arterial occlusions in the lower legs. The third was the only patient in the series in whom thromboendarterectomy precipitated distal thrombosis leading to gangrene and amputation.

The operative mortality was 13.8 per cent. Death was due to cerebrovascular accidents occurring late in the postoperative period in two cases; to renal failure following a prolonged period of hypotension at operation in two; to mesenteric arterial occlusion in one; and to unknown cause in one. With improvement in the selection of patients and in operative technique, the mortality was reduced to less than 8 per cent in the second half of the series.

DIFFUSE ARTERIOSCLEROSIS

Diffuse arteriosclerosis is characterized arteriographically by multiple irregularities of the arterial lumen throughout the length of the arterial tree. In all cases studied in this category, there was one zone or more of complete occlusion or pronounced stenosis (Figure 6). The arterial tree proximal to the popliteal artery showed significant narrowing or thrombosis in most of the patients. Ischemia resulting solely from occlusions of arteries distal to the popliteal artery was observed in fewer than 4 per cent. In patients with thrombosis or stenosis proximal to the popliteal artery, it was frequently difficult to distinguish clinically between diffuse arteriosclerosis and the purely segmental type previously described. The presence of gangrene or pain at rest with severe ischemia usually denotes multiple arterial occlusions. Gangrene was present in only six and rest pain in

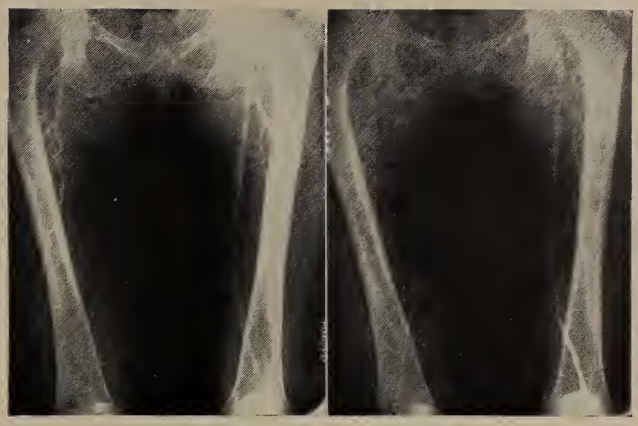


Figure 6.—Bilateral serial femoral arteriograms obtained by injection of the abdominal aorta showing segmental thrombosis of the right superficial femoral artery. Note the multiple arteriosclerotic changes in the right popliteal artery distal to the occluded segment and, to a lesser degree, in the left femoral artery, indicating diffuse arteriosclerosis. Thromboendarterectomy was not advised for this patient.

five of the 58 patients with segmental disease. Palpable cord-like thickening of the femoral artery in the presence of thrombosis of the aorta or iliac arteries is also suggestive of diffuse arteriosclerotic changes at lower levels. In most patients with arterial occlusion proximal to the level of the popliteal artery, arteriography was necessary to distinguish the category of the arteriosclerotic process.

Therapy for patients with peripheral ischemia secondary to diffuse arteriosclerosis is limited to palliative measures. Special care is necessary in the protection of the feet. Care is taken to avoid trauma, exposure to extremes of cold or heat, and infection, any of which may be the precipitating factor in the development of tissue necrosis. Patients with claudication are advised not to walk far enough to cause pain. Frequently relief from rest pain may be obtained by requiring the patient to sleep with the head of the bed 12 inches higher than the foot. Systemic vasodilatation by any of the drugs currently widely used for the purpose is only rarely attended by evidence of increased flow of blood to the extremity. Symptomatic improvement from the use of alcohol appears to be due only to dulling of the sensorium to the discomfort or pain of ischemia. The employment of Buerger's exercises, aside from giving the patient something to occupy his mind, has similarly been unrewarding. There has been no real evidence that prohibiting the use of nicotine has materially altered the evidences of ischemia or the progression of the disease. The use of contrast baths is usually more harmful than beneficial.

Benefit has been reported by many investigators from the regional vasodilatation produced by lumbar sympathectomy. Sympathectomy was performed on 125 patients in this series during the past five years.

Detailed studies to evaluate the changes in peripheral circulation were made on 50. These included oscillometry, measurements of walking tolerance, estimations of the sympathetic tone as determined by the skin temperature response to reflex vasodilatation, and recording of basal skin temperatures of the extremities when exposed in a room where the temperature is constant. The symptomatic and temperature response to lumbar sympathetic block was recorded. All studies were repeated after sympathectomy. Review of the data obtained showed that the indications for sympathectomy were more valid when based upon clinical observations than upon the more complicated laboratory studies. The collateral flow to the extremity tended to be improved in almost all cases, regardless of the level of the occlusion, the degree of vasoconstriction or the response to sympathetic block. The degree of improvement was greater in those extremities in which vasoconstriction, as evidenced by cyanosis and sweating, was superimposed upon organic occlusion.

Although the available evidence indicated that improved collateral flow of blood resulted from sympathectomy, the flow needed for relief of the manifestations of ischemia varied with the type of complaint and the degree of ischemia. Sympathectomy was of the greatest value for patients whose major complaint was claudication. The average patient with this complaint was found to have doubled his walking tolerance after operation. In many cases this was adequate to restore the patient to productive activity. The increase in peripheral skin temperature observed after sympathectomy suggests, moreover, that the improved arterial supply to the skin may in many instances prevent or delay gangrene. Sympathectomy was of less value in the more advanced ischemic states in which rest pain or necrosis had developed. The postoperative increase in supply of blood was adequate to relieve rest pain in nine of 14 patients with this complaint. In no case was the degree of restoration of function sufficient to permit more than limited activity. A useful index in judging the possible benefit to be gained from sympathectomy to relieve rest pain is the measure of the capillary filling pressure. Cutaneous blanching of the toes or forefoot, with the patient supine and the foot at the level of the heart, indicated gross inadequacy of the collateral supply. Operation was ineffective in producing sufficient increase in flow of blood to relieve pain in cases in which there was this degree of arterial obstruction. Local amputation after sympathectomy was successful in three of 12 cases in which there was gangrene of one or more toes. Little credit was given to the effect of sympathectomy, however, inasmuch as results were comparable in a control series of local amputations. As a result of this study, sympathectomy in peripheral arteriosclerosis has been recommended in those patients with ischemic symptoms (1) who have been demonstrated clinically or by arteriography to have the diffuse form of arterial disease; (2) who show only moderate decrease in capillary filling pressure; and (3) who have developed minimal or no tissue necrosis.

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Pediatric Endocrinology

Notes on Some Recent Advances

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• *Until recently, congenital adrenocortical hyperplasia has defied most medical and surgical therapeutic efforts. However, in properly selected patients, cortisone will suppress the abnormal cortical hormone production. This, in turn, will lead to previously inhibited maturation and developmental progress.*

Adrenocortical insufficiency calls for much diagnostic alertness, as early recognition and immediate treatment are of paramount importance. The available therapeutic means are beneficial, although their limitations and potential dangers should be heeded.

Among newly developed diagnostic techniques, thyrograms promise to be helpful in the study of thyroid hyperplasia and neoplasia. Thyroid cancer, occurring infrequently in childhood, should at the earliest possible time be treated surgically and with postoperative radiation therapy.

THE REMARKABLE PROGRESS of endocrine investigation with its impact on clinical medicine has opened new vistas and illuminated new problems. A few of the recent advances, of importance in both diagnosis and therapy, should be of especial interest to clinicians who deal with infants, children and adolescents.

CONGENITAL ADRENAL HYPERPLASIA

The studies of Wilkins and co-workers[2, 26-32] focused a great deal of attention upon congenital adrenal hyperplasia, an entity of clinical, embryological, developmental, social, psychological and pathological import. The more than occasional familial incidence of the condition is well known.[13] In females the clinical manifestations are pseudohermaphrodism and virilism; in males, macrogenitosomia praecox. The accelerated growth, muscular development and epiphyseal ossification, the early growth of puberal hair, and the progressive virilization are due to excessive secretion of adrenocortical androgens.

This abnormal production of androgens may be the only pathophysiological aberration. However, not infrequently it is associated with disturbed electrolyte regulation typical of Addison's disease, a complication leading to early death unless immediately and properly treated. An occasional patient with congenital adrenal hyperplasia will have hypertension. Very rarely the condition may be associated with signs of deficient regulation of carbohydrate metabolism.[25, 29]

Surgical and hormonal therapy (except with cortisone) of congenital adrenal hyperplasia has been disappointing. However, cortisone in proper dosage and administered at an optimal time will at least diminish the manifestations of androgenic overproduction (acne, hirsutism). In older girls it will permit the inhibited normal maturation processes to take their physiological course, as evidenced by breast development, vaginal estrinization, menarche and menstruation and adolescent feminine features and configuration. Somatic growth and development proceed equally well in boys, and in the older ones testicular maturation takes place. Early treatment with cortisone will prevent epiphyseal closure and stunting. The psychological and social benefits derived from the treatment are of importance in the adjustment of these patients to their surroundings. During cortisone administration a significant decrease in the urinary content of 17-ketosteroids and estroids takes place.

The congenitally hyperplastic cortices in all probability secrete abnormally large amounts of both androgens and estrogens. The latter have no discernible effect on females, as they are blocked by the even larger amounts of androgen. Both cortical androgens and estrogens will inhibit the secretion of pituitary gonadotropins, an interference which explains the gonadal immaturity.

The mechanism of action of the exogenous cortisone is thought to be an inhibition of pituitary production of adrenocorticotropin, causing a decrease of adrenocortical activity and permitting the release

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of pituitary gonadotropins which, at the proper time, lead to gonadal maturation and unopposed normal secondary sex development.[28] The anomalies that were present at the start are, of course, not influenced by cortisone therapy.[12]

For the initial treatment (leading to maximal suppression of 17-ketosteroid excretion in about 5 to 10 days), Wilkins prefers intramuscular administration as the results are more predictable. Infants receive 25 mg. a day, whereas children eight years of age and older are given 50 mg. a day. The daily maintenance dose (which should be determined for each patient individually) is about 5 mg. for infants and about 25 mg. for older children. The spacing of intramuscular administration of cortisone (for example, 25 mg. every 4 days in the younger and 100 mg. every 4 days in the older group) appears to lead to therapeutic results as good as those obtained with daily administration. Due to the more transient effect of cortisone given orally, more hormone is needed when it is administered by mouth. The recommended dose for infants is 5 to 12.5 mg. a day, and for older children 50 to 75 mg. a day. It is given in two or three divided doses.

With therapeutic doses of cortisone it is apparently not possible to depress the 17-ketosteroid excretion beyond a certain level. The residual amounts of urinary steroids may possibly represent metabolic end-products of the exogenous cortisone. Attempt should be made to reduce the urinary ketosteroid level below 8 mg. a day. In order to avoid toxic effects of cortisone, it is desirable to use the smallest dose that will maintain the suppression of the abnormal adrenocortical activity. The determination of this maintenance dose should be guided in the individual patient by clinical observations as well as repeated determinations of urinary 17-ketosteroid content.

It is of considerable interest that cessation of long-continued cortisone treatment is followed by an increase of urinary ketosteroids, not, however, to the pretreatment level. This may mean that the cortisone-induced suppression of adrenocortical activity persists to some extent after administration of cortisone is stopped. Whether a still longer period of treatment might result in a greater or even permanent inhibition of the cortical overactivity is not known as yet. At any rate, it appears that an infant or child with congenital adrenal hyperplasia is in need of cortisone therapy for a long period to obtain the desired benefits.

In the few reported cases of patients with hypertension coexistent with congenital adrenal hyperplasia who were treated with cortisone, good response was noted: The blood pressure remained normal for as long as a two-year period of therapy.[19, 20, 29]

ADRENOCORTICAL INSUFFICIENCY

The recognition and immediate treatment of hypoadrenocorticism, a not very common disorder in the pediatric age range, are of paramount importance.[4, 8, 11, 17]

Particularly in the very young, the manifestations of cortical insufficiency are easily mistaken for those of other disorders, among them pyloric stenosis, enteritis and cardiac disease.[14] The clinical signs include: vomiting, which may be projectile; visible peristaltic patterning in some infants; dehydration; diarrhea; acidosis; anorexia; loss of weight or poor gain in weight; microcardia; increasing weakness; circulatory collapse. The content of sodium, chloride and carbon dioxide in the serum is less than normal; of potassium and nonprotein nitrogen, more than normal. The eosinophil response is abnormal. Eosinophilia may be manifest in peripheral blood. The hypoglycemia and pigmentation that are characteristic of Addison's disease in older children and adults may be absent in the disease during early life.

Rarely occurring in "pure" form, the disease is more commonly associated with congenital adrenal hyperplasia. Signs of the latter or the appearance of abnormal sex manifestations in early life should warn of the possibility of incipient adrenocortical failure. Whether or not associated with another disorder, cortical insufficiency necessitates immediate action. In undiagnosed cases a clue to the underlying disorder may be given by the dramatic response to saline administration. In a number of cases the patients are known to have averted cortical failure, at least temporarily, by eating salt.

The therapeutic armamentarium for patients with cortical insufficiency includes cortical extracts, sodium chloride, cortisone and DOCA (desoxycorticosterone acetate).[2, 22] In "mixed adrenal disease," the administration of cortisone for the suppression of cortical overactivity should be undertaken with the consideration that cortisone is known to alter the requirements for DOCA. As to DOCA, it may, after a period of initial regulation, be administered in the form of pellets. Stress of one kind or another, including intercurrent infections, may necessitate a readjustment of therapeutic agents. The significant metabolic and toxic effects of excessive amounts of DOCA and cortisone should be constantly watched for and their appearance should lead to immediate reevaluation of therapeutic regimen.

In the fervor with which these and other endocrine agents are currently used, their obvious limitations must not be overlooked nor respect for their powerful metabolic and potentially harmful effects be lessened. In this connection, it is of considerable interest that cortisone injected into pregnant mice

produced cleft palate and other congenital malformations in the young. The earlier during gestation the cortisone was administered, the more severe were the defects observed in the young.[6]

DIAGNOSTIC PROCEDURES

To the array of well-established chemical, biological, histological, hematological and physical tests available for endocrine and metabolic studies (such as electrolyte and mineral determinations, hormone excretion studies and assays, tolerance tests, eosinophil response test, and radioactive iodine uptake studies) new and promising techniques have been added.

The cortisone-induced depression of urinary ketosteroids and estrogens in patients with adrenal hyperplasia helps in the differentiation between this condition and adrenocortical neoplasms. In the presence of the latter, cortisone does not suppress the urinary steroids.[15, 24, 27] By spectrometric test[7] it is possible to distinguish between androsterone and dehydroisoandrosterone. The latter steroid is often excreted in significant amounts by patients with cortical tumors.

The determination of adrenocortical response to exogenous corticotropin is a specific hormonal test and, particularly when the hormone is intravenously administered, has proven to be reliable. It serves in the differentiation of primary and secondary adrenocortical insufficiency.[23]

Testicular biopsies may be helpful in distinguishing between true sexual precocity and adrenal "precocity."[21]

The pronounced effect of injected thyrotropic hormone on the I^{131} uptake of patients with pituitary deficiency (secondary hypothyroidism) is a means of differentiating that condition from primary hypothyroidism.[16]

Functioning thyroid tissue containing adequate amounts of I^{131} can be visualized by scanning the gland with a directional scintillation counter. The resulting "scintigram" or "thyrogram" appears to be very helpful in the detection and study of hyperplastic and neoplastic disorders of the thyroid gland and in the search for aberrant thyroid tissue.[1]

CANCER OF THE THYROID GLAND

Thyroid cancer in children is rare.[9] Duffy and Fitzgerald,[5] reporting upon 28 cases in patients between 4 and 18 years of age, noted that these cases constituted 6.5 per cent of all cases of thyroid cancer observed at Memorial Hospital in New York. Horn and Ravdin,[10] in a study comprising 22 patients 25 years of age or younger, reported that those cases made up 13.8 per cent of all cases of thyroid cancer at the Hospital of the University of Pennsylvania.

The disease ordinarily runs a somewhat more benign and protracted course in persons in the younger age groups. Frequently there are long intervals between the onset of the disease (which relatively often occurs at the time of puberty) and definite diagnosis. The incidence of metastasis to cervical lymph nodes is high. The metastatic lesions may be present for years before the primary thyroid tumor is diagnosed.

It is generally agreed that the presence of a nodular goiter or any suspicious mass in the thyroid region should be considered a potentially malignant neoplasm until proven otherwise by excision and biopsy. Dailey and Lindsay[3] said that the likelihood of malignant disease is greatest if a nodule is solitary, if there has been recent enlargement, or if there is associated vocal cord paralysis.

The series from Memorial Hospital included nine patients who in the past had received radiation treatment to the thymus. However, Duffy and Fitzgerald did not feel that they could draw valid etiological conclusions. Horn and Ravdin mentioned that none of the 22 patients in their series had a history of previous radiation therapy for thymic enlargement.

Surgical extirpation and postoperative radiation treatment should be carried out at the earliest possible time. The use of radioactive iodine has definite limitations in this condition and should be reserved for a few selected patients. Rawson, Rall and Peacock[18] expressed belief that "treatment with radioactive iodine for cancer of the thyroid which is localized to the thyroid and adjacent lymph nodes and which can be removed by competent surgeons is indefensible."

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No Conclusions by FDA on Boric Acid

THE FOOD AND DRUG ADMINISTRATION is investigating the use of boric acid in infants' preparations, but has come to no conclusions, according to Associate Commissioner John L. Harvey. He said there was no plan to restrict distribution. Mr. Harvey said FDA was reappraising the subject of boric acid toxicity, and when all the facts are in, "hopes to be in a position to determine whether there is any necessity for label changes or other steps in order to adequately protect the public interest." He said information was being obtained from pediatricians and other medical practitioners, as well as from sources from which "special studies of a controlled and reliable character" may be obtained.

—A.M.A. Washington Letter

What's New in Cerebral Palsy

MARGARET H. JONES, M.D., Glendale

• *Among new researches bearing on cerebral palsy are the growth of brain cells in tissue cultures for experimentation; the use of polysaccharides to prevent the formation of a glial barrier to nerve growth after injury; observation of changes in reactions of neurons at various stages of development; the finding of hypernatremia and hyperchloremia in lesions of the frontal lobe and the thalamus; stimulation of cerebral blood flow by injection of sodium bicarbonate and retardation with ammonium chloride; and studies of serial sections of brains of palsied children who died.*

Study of development in the early months of life has made possible the detection of significant abnormalities in behavior early in life. Loss of hearing may be tested in very young children by measuring minute variations in electrical resistance of the skin upon auditory stimulation of the sympathetic nervous system.

Conditions which have been described as having been confused with cerebral palsy are dislocation of a cervical vertebra, hereditary spastic paraplegia, transverse myelopathy, injury to the spinal cord or cauda equina by anomalous growths of the spine, and also encephalitis and meningitis.

Sedation has proved a valuable adjunct to electroencephalographic study of cerebral palsy. Better criteria for abnormality in the young child should be determined and the application of them more clearly standardized.

Simple exercises are useful for early training of palsied children to stimulate development. "Crossed laterality"—the dominant eye being contralateral to the preferred hand—has been counteracted by special training with great success in eliminating emotional and behavior problems and accelerating development.

Recent studies indicate that only 50 per cent of cerebral palsy patients have normal or better intelligence.

Subluxation of the hip joint, a common deformity associated with cerebral palsy, can sometimes be corrected by operation if detected at an early stage. Radical ablation of epileptogenic foci in the cortex is also being done in young patients if drug control of seizures fails. Frontal topectomy, cingulate gyrectomy or prefrontal lobotomy may be advisable in cases in which proper response to drug therapy is not obtained.

Improvement in behavior as well as control of seizures may follow the use of Benzedrine,® Dexedrine,® Dilantin® sodium, Mebaral® and phenobarbital. Alcohol, paraldehyde and chloral hydrate have been effective as relaxants.

In reviewing briefly some of the recent work related to cerebral palsy, the author wishes to recommend Sir William Osler's five lectures on "The Cerebral Palsies in Children."[22] Little reference is made today to these excellent articles revealing an understanding of the problem which has not changed too greatly in the succeeding 65 years.

While progress continues in the treatment of cerebral palsy by physical therapy, drugs and surgical procedures, basic research in the pathological factors in this condition offers the best hope for early diagnosis and more effective treatment.

Part of the panel on What's New in Pediatrics presented before the Section on Pediatrics at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

1. *Basic Research Bearing on Cerebral Palsy*

Pomerat[26] has grown brain cells of various types in tissue cultures as a means of studying the direct effects of many factors in brain cells.

Crude liver or vitamin B_{12} has been found to affect the glial reaction so as to improve the status spongiosus as seen in the lateral columns in Addison's disease.

Permanent damage to the brain due to trauma at birth or afterward may be preventable by medication if the research of Windle, Clemente and Chambers[33] can be successfully pursued. They have been able with the use of a complex polysaccharide, Piromen,® to prevent the formation of a glial bar-

rier to the growth of peripheral nerves in the brain.

Development of brain metabolism studies by Hicks[14] indicates that neurons have widely different reactions at successive stages in development. For example, the neurectoderm is invulnerable to a wide variety of metabolic interruptions. The neuroblast is resistant to anoxia and hypoglycemia but sensitive to sulfhydryl and radiation and the "antisulfyl" action of steroids. Factors that affect glucose metabolism damage the neuron in a newborn child regardless of the oxygen level but, in the adult neuron, the damage is chiefly anaerobic. Interruption of normal steroid metabolism leads to neuron necrosis in the newborn but to marked interstitial and vascular changes in the adult.

In lesions of the frontal lobes and of the hypothalamus, according to Cooper,[8] hypernatremia (with 139 to 155 mg. of sodium per liter in the serum) and hyperchloremia (with 112 to 125 mg. of chlorides per liter in the plasma) usually occur, while the potassium content remains approximately normal. The mechanism causing this imbalance is not understood but may be the cause of some postoperative deaths.

Metabolic alkalosis which causes an increase of 65 per cent in the cerebral blood flow above the resting level may be produced by the intravenous injection of 3 per cent sodium bicarbonate, according to Schieve and Wilson,[29] who also found that a 0.8 per cent solution of ammonium chloride reduced the cerebral blood flow about 25 per cent.

Courville[9] has analyzed residual lesions resulting from antenatal and neonatal asphyxia in an attempt to link them with the abnormalities found in cerebral palsy. Other investigators have questioned whether factors other than anoxia may also be present in birth trauma. Magoun[17] and also Josephy are making studies of serial sections of the brains of children that died with cerebral palsy which it is hoped will lead to better understanding of this condition.

2. *Early Diagnosis*

Gesell and Amatruda[11] have outlined basic patterns of motor, language and personal-social development and by study of infants in the early months of life have been able to detect minor but clinically significant deviations from the norm which became more definite with age. Collis[7] concluded from clinical tests of mental activity in infants that "physical activity of the newborn infant does not display the influence of thought processes, but is entirely reflex . . . the reflex quality normally diminishes as competence emerges, and in the fourth month of life the change can be demonstrated. . . . in full term infants, at the fourth month of life deficient mental maturation is shown by lack of normal subordination of reflex processes; motor dysfunction, on the other hand, is shown . . . by failure of the reflex processes to operate normally in voluntary activity."

Although loss of hearing and loss of vision are frequent in cerebral palsy the early diagnosis of these defects is not easy. Hardy and Pauls[13] have described a "psychogalvanic skin resistance audiometer" developed at the hearing and speech center of Johns Hopkins Hospital. Without previous sedation the subject is seated comfortably and is amused while zinc electrodes are placed on the instep of each foot. Auditory stimulation of the sympathetic nervous system causes sufficient perspiration to reduce the resistance of the skin to the passage of a minute electrical current between the electrodes, from which the changes in voltage are transmitted and recorded.

3. *Differential Diagnosis*

Alexander, Masland and Harris[2] have described a case of anterior dislocation of the first cervical vertebra in which the symptoms of pallor and listlessness occurring at irregular intervals were attributed successively to congestion of the lung, to hypoglycemia, and to birth injury, as also to cerebral palsy.

Spastic paraplegia is another condition difficult to differentiate from cerebral palsy. Ford[10] described hereditary spastic paraplegia as a heredofamilial degenerative disease.

Recently described is transverse myelopathy[23] which resembles thrombosis of the anterior spinal artery but sometimes follows acute infectious diseases, the symptoms including ipsilateral weakness and contralateral loss of pain sensitivity and temperature control without loss of the senses of touch, vibration and position.

Also to be distinguished from cerebral palsy is diastematomyelia caused by the transfixion of the spinal cord or cauda equina by a bony spicule arising from the posterior aspect of a vertebra. In all the cases of this condition reported by Ingraham[16] there was also other anomaly of the spinal column. Neurologic impairment of the lower extremities and of the rectal and vesical sphincters was progressive, and in a number of cases there was a cutaneous midline defect.

The possibility of mistaking encephalitis and meningitis for cerebral palsy is illustrated by the case reported by Benda[4] of a child in whom the only early symptoms were retarded development in sitting, walking and talking, slight strabismus, and "walking with a wide base." Spasticity developed gradually from the age of six years and the child died at 11½ years. "Autopsy showed ample evidence of chronic productive encephalitis which was still in

a progressive state and which involved the cortical gray matter as well as the white matter and basal ganglia. Comparison with lesions in the case of rheumatic encephalitis indicated this diagnosis."

4. *Electroencephalographic Findings*

Of 1,287 children with cerebral palsy in Los Angeles County, 319 were examined by electroencephalogram.[32] Abnormalities were thus indicated in 66 per cent. Of the spastic children, abnormalities were indicated in 70 per cent, 43 per cent of the abnormalities being focal lesions. Abnormalities were likewise indicated in 50 per cent of the children with athetosis, 50 per cent being focal lesions. The percentage of abnormality indicated in "mixed types" was 71, and in children with ataxia, 66.

Ross, Grizzelle and Norfleet[28] studied the electroencephalographic records of 14 children to find whether certain facts of clinical importance could be determined from the records. They concluded that while the electroencephalogram indicates the extent and localization of cerebral lesions this information was not of clinically diagnostic value; intelligence potentials could not be determined from the readings, and prognosis regarding seizures was rarely possible.

In the review by Perlstein, Gibbs and Gibbs[25] of 212 cases of spastic and athetoid cerebral palsy in children, abnormalities were found in the electroencephalograms of 59 per cent of the spastic children who had not had seizures and in 95 per cent of those who had them. In 84 per cent of the spastic children the abnormalities were severe. Abnormalities were indicated in the recordings on 27 per cent of children with athetosis who had not had seizures and in only 67 per cent of those who had. In a series of unselected epileptic children 90 per cent had abnormalities evident in the electroencephalogram, while in normal controls abnormalities were indicated in only 16 per cent. In the recordings of children with cerebral palsy there was a greater frequency of spikes than in the recordings on children with epilepsy, while patterns characteristic of petit-mal and psychomotor disturbances were comparatively rare. They felt that certain inferences could be drawn from such data: "If there has been no history of seizures, the finding of a very abnormal electroencephalogram warns that clinically evident seizures may occur. If there has been no history of seizures the finding of a normal electroencephalogram gives some assurance that clinically evident seizures will not occur."

Aird and Cohen[1] in 1950 reviewed records of 187 cerebral palsy patients between 1 and 21 years of age and studied the electroencephalographic tracings in relation to type and degree of neuromuscular handicap. They concluded that "electroencephalography possesses the same diagnostic and prognostic value in this condition that it does in other neurological disorders associated in a high percentage of cases with cerebral pathologic change and dysfunction. Claims which either belittle its value in this condition or on the other hand stress its unique diagnostic potentialities in cerebral palsy, would appear unwarranted."

Gibbs,[12] at a round table on electroencephalography at the American Academy of Pediatrics meeting in October 1952, described a pattern characteristic of total disorganization (mountainous waves) associated clinically with mass stiffness and spasms. Children in whom these signs were observed almost always died by the age of three years. He stated that if the recording of the brain waves included the period just between sleeping and waking the number of abnormalities found was doubled in cases of epilepsy and increased by a third in cases of psychomotor disturbance. He believed that petit-mal epilepsy could be detected by this method better than by hyperventilation.

Sjaardema[31] has stated that under sedation many abnormalities not otherwise recorded can be detected. He has found that Nembutal,® Seconal,® and paraldehyde often obscure patterns by producing rapid activity. Chloral hydrate gave better results used in 10 per cent solution in syrup, one to four drams orally. He found the best sedative to be Demerol® administered intravenously and followed by sodium pentothal until rapid activity begins. This combination has an effect similar to that of going to sleep and coming out of sleep. Bottle feeding may also induce first alertness and then drowsiness characterized by a pattern of four cycles per second in which focal and unilateral lesions may be detected.

Sjaardema observed that there is no unanimity in the interpretation of electroencephalograms of young children. It would seem that better knowledge of the use of sedation and further review of the criteria for abnormality in the readings are necessary before statistical analyses can have real meaning. For example, of 33 children born with erythroblastosis at Children's Hospital in Los Angeles 25 had some neuromuscular handicap, but in 15 of these children no abnormality was detected by electroencephalogram even though 10 of the 15 were given sedation. Such results do not seem conclusive.

5. *Early Treatment of Neuromuscular Handicap*

A very young infant that does not spontaneously lift his head when in the prone position may be helped to develop this faculty by leaving him on his abdomen for gradually increasing periods of time. Head and trunk control may be developed in a child six to twelve months of age by propping the child in an almost sitting position, asking him to

put out his hands and grasp one's thumbs, and pulling him forward to a sitting position on the edge of his seat, from which he can be assisted to stand on the therapist's lap. A child who does not kick his legs alternately in the normal manner may be trained by exercise of the bicycle type. Many other devices, such as special chairs adapted to particular handicaps and special jumper seats on springs, are being improvised to help the palsied infant to develop at as nearly normal a rate as possible.

6. *Mental and Personality Development*

Berenberg, Byers and Meyers[5] have stressed the importance of promoting maximum personality adjustment as well as physical potential. They point out the well-known socializing influence of the nursery school in its "effect of weaning from close parental control, the relieving of the overtaxed parents and siblings of caring for a child through an unusually long period of dependence," as well as the assistance that can be given the parents by teaching them new methods of dealing with the child's handicap.

McIntire[19] reported that of a series of patients with cerebral palsy 75 per cent were of average intelligence. Hohman,[15] however, reported an exactly reverse proportion in a review at the October 1952 meeting of the American Academy of Cerebral Palsy: 75 per cent of his patients were below average in intelligence, and of these 50 per cent were seriously retarded. Miller and Rosenfield[21] tested 330 children in Buffalo who were under treatment for cerebral palsy and found that 50 per cent had an intelligence quotient below 70, 22.5 per cent were rated between 70 and 89, 23 per cent between 90 and 109, and 4.5 per cent over 110. They found that 40 per cent of the spastic children and the same proportion of those with athetosis were very distractable, and that 40 per cent of the spastic children and 8 per cent of those with athetosis had disturbances of visual control. Of 954 palsied children in Los Angeles County[32] 46 per cent were found to have normal intelligence, only 4 per cent being above average while 21 per cent were on the borderline of normal and 29 per cent had low mentality.

Emotional disturbances, behavior problems in school and retardation in learning have been attributed by Seldowitz and Berman[30] to "crossed laterality"—a condition in which the dominant eye is contralateral to the preferred hand. Special training methods to overcome this handicap have been very successful.

7. *Orthopedic Surgery*

Barnett[3] reviewed orthopedic surgical procedures in relation to cerebral palsy recently and concluded that operation "is only one part of a broad plan of treatment for patients with cerebral palsy; the aim of treatment is to make the patient physically independent and socially competent and acceptable. Although surgery is often required to supplement specific therapies and bracing, it is not to be considered as a substitute for other rehabilitative measures. The value of surgical treatment should not be measured by its aid in overcoming a local deformity or obstruction, but by its contribution to the overall rehabilitation of the patient. A knowledge of proper indications for surgery and adequate preoperative and postoperative care is as essential for good results as a skillful performance of the surgical procedure." Among the common deformities associated with cerebral palsy he included progressive subluxation and dislocation of the hip joint, which was also reported from the Children's Hospital in Los Angeles.[18] If such subluxation seems imminent because of marked adduction deformity, frequent hip x-rays are indicated to detect the earliest stages of subluxation so that surgery can be planned in an effort to prevent further migration of the head of the femur.

8. *Neurosurgery*

Rand,[27] in a recent discussion of the problem and review of the results in the literature, called attention to the fact that in a series of 17 cases of seizures thought to be produced by birth injuries, 76 per cent were relieved from seizures by ablation of the focal epileptogenic lesions of the cortex. Coincidentally with the diminution of seizures, in hemiplegic patients the muscular handicap decreased and behavior improved. Penfield[24] stated that "operative procedures are better controlled and are less subject to risk at 10 years than at 2 but we have been forced to reconsider our policy of postponement in regard to radical ablation of the epileptogenic cortex in those cases in which there is progressive intellectual degeneration or progressive paralysis."

In 40 per cent of palsied children with abnormal behavior electroencephalograms indicate abnormality. Some of these patients respond to drug therapy. Those with most severe emotional disturbance may not, and neurosurgical operation may facilitate general care and rehabilitation. Frontal topectomy, cingulate gyrectomy or prefrontal lobotomy is suggested.

9. *Drug Therapy*

Drugs which reduce or control seizures are important in the treatment of cerebral palsy, since seizures often occur in this condition. For example, in a recent survey in Los Angeles County[32] seizures were noted at some time in 37 per cent of 1,287 cases; 33 per cent of the patients with athetosis, 62 per cent of the spastic children, 40 per cent with mixed symptoms and 42 per cent with rigidity were reported to have had seizures of some kind.

Bradley[6] has pointed out the value of Benzedrine®

and Dexedrine® in behavior disorders in children. Behavior disorders occur very frequently in palsied children, even those in whom no abnormalities are indicated by electroencephalography; these drugs in doses of 5 to 20 mg. a day sometimes afford considerable improvement in behavior.

Improvement in behavior can be obtained in some cases by the use of certain other medication such as Tridione® in doses of 0.3 gm. (5 grains) three times a day or Dilantin® sodium in doses of 32 mg. (½ grain) one to three or more times a day. This improvement may be of a spectacular nature, as in the case of a four-year-old boy who, after study and treatment at the School for Cerebral Palsied Children of Southern California was referred to the local school but could not be managed there. He was given 5 mg. of Benzedrine sulfate daily, and with this medication he has been able to adjust to the local school group.

Alcohol is still probably the best relaxant for cerebral palsy patients, especially those with athetosis, and paraldehyde is sometimes effective. Phenobarbital and Mebaral® have been used with success, the latter especially in tension athetosis in doses up to 0.59 gm. (9 grains) daily. Chloral hydrate in 10 per cent syrup given orally or in 10 per cent aqueous solution given rectally may be used for occasional sedation if other drugs fail to produce sleep.

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Western Equine Encephalitis in Infants

A Report on Three Cases with Sequelae

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• Approximately one-third of the laboratory-confirmed cases of Western equine encephalitis occur in children under the age of 10. The present paper describes three instances of Western equine encephalomyelitis virus infection in infants under one year of age, together with the resultant sequelae. The difficulties associated with diagnosis of central nervous system disturbances in very young children are discussed, and it is pointed out that in view of the frequent occurrence of clinical infections with the arthropod-borne encephalitis viruses these agents should be given serious consideration as a cause of acute central nervous system infection in childhood and as the possible etiology for obscure, severe neurological disturbances in the pediatric age groups.

SINCE THE ISOLATION and identification of the Western equine encephalomyelitis virus from horses by Meyer in 1931[6] and the development of serologic methods for determining the etiologic factor in cases of human infection, much epidemiologic information on the disease has accumulated. It has become apparent that in California this virus, as well as that of St. Louis encephalitis, is a frequent cause of the clinical entity "infectious encephalitis"[5] and that the geographical and seasonal distribution of human cases of Western equine encephalitis seems to be directly related to the environmental requirements of the arthropod vector, the mosquito Culex tarsalis.[4]

In the eight-year period 1945 through 1952, 1,985 cases of "infectious encephalitis" were reported to the California State Department of Public Health.[1] The year of highest incidence was 1952 with a total of 752 cases reported. In the seven years 1945-1951, 196 cases of Western equine encephalitis were confirmed by laboratory means, and in the year 1952 alone there were 370 laboratory proved cases (Table 1).

Epidemiologic studies of the laboratory-confirmed cases of virus encephalitis in California indicated that this disease is particularly frequent in the younger age groups. Lennette and Longshore[5] reported that of a total of 135 cases of St. Louis encephalitis occurring between the years 1945 and 1950, 38 (28 per cent) were in persons under 10 years of age, and 31 (40 per cent) of 77 cases of Western equine encephalitis were in persons in that age group. In 1952, of a total of 370 laboratory-confirmed cases of Western equine virus infection, 178 or 48 per cent were in persons under the age of 10 years. The proportion of cases of Western equine encephalomyelitis for the period 1945 through 1952 in which the patient was under 10 years of age is shown in Table 1. More than one-third of the laboratory-confirmed cases since 1945 have been in persons under the age of five years and approximately one-half in persons under the age of 10. Patients with St. Louis encephalitis in the same period were not of the younger age groups in so high a proportion of cases. It was suggested[5] that one reason for this might lie in a higher incidence of inapparent infection with the St. Louis virus in the general population of the endemic area which in turn could result in a high proportion of infants with passively acquired immunity.

While the severity of a disease may be reflected in the mortality rate, it may also be reflected in the development of serious sequelae which, over a period of time, may present highly important socio-economic problems. The incidence of sequelae in instances of human infection with the virus of Western equine encephalitis cannot be stated at present. This information will be acquired only after long-term study of large numbers of patients with labora-

TABLE 1.—*Age distribution of laboratory-proved cases of western equine encephalitis. California, 1945-1952*

Age Group	1945-50 No. Cases	1945-50 Per Cent of Total	1951 No. Cases	1951 Per Cent of Total	1952 No. Cases	1952 Per Cent of Total
Under 5 years.....	61	35	12	55	147	40
Under 10 years....	77	44	13	59	178	48
Total, all ages....	174	100	22	100	370	100

Source: California State Department of Public Health.[1]

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tory-confirmed infection. Such studies are at present in progress under the aegis of the California State Department of Public Health. Undoubtedly there are many instances of illness due to this virus in which the clinical symptoms are not those of an encephalitic process and laboratory confirmation therefore is not obtained. Until such time as the more common use of serologic tests in such cases brings to light the varied potentialities of the clinical syndrome of infection with this virus, the true incidence of sequelae will be difficult to ascertain. It is apparent, however, from the literature, that there occurs an appreciable incidence of serious neurological damage in children following viral encephalitis of several etiologic types, including that due to the Western equine virus. Wynns and Hawley,[9] dealing with St. Louis encephalitis, reported a mortality rate of 62 per cent in children, with neurological sequelae present in 22 per cent of the survivors. They noted that the incidence of permanent sequelae was highest in the younger age groups. Farber and co-workers[3] described eight cases of Eastern equine encephalitis in infancy; five patients died and the three survivors had permanent neurological sequelae. Simpson and Meiklejohn[8] examined 38 patients who had had Japanese B encephalitis one year after onset of the disease and noted sequelae in 11 of them, 10 of whom were under the age of 15 years. Reports of residual neurological damage following infection with Western equine encephalitis virus have been limited to descriptions of specific cases. Davis[2] reported two cases in early infancy with permanent sequelae in both. Noran and Baker[7] described one case occurring at the age of one month, with permanent neurological damage of severe degree and death at the age of three years.

It is the purpose of the present report to present three instances of permanent and serious neurological sequelae of Western equine encephalitis virus infection occurring in children under one year of age. The three patients were studied at the University of California Hospital and the diagnosis was confirmed by laboratory tests at the Viral and Ricksettsial Disease Laboratory of the California State Department of Public Health in Berkeley.

CASE REPORTS

Case 1: A 10-month-old girl was admitted to the University of California Hospital on October 6, 1949, with complaints of convulsions and high fever for eight weeks. At the onset of illness mild diarrhea developed, and on the second day of illness, fever, as high as 108 degrees F., which continued for ten days. On the second day of fever, convulsion that lasted 24 hours occurred. The patient was then treated in a hospital for a week. At the time of discharge she was mentally disoriented and the right arm and right leg seemed weak. Fever continued and convulsions occurred at least once a day. A variety of diagnoses had been considered, including tonsillitis, infection of the ear, measles and pneumonia. The convulsions were ascribed to the fever.

TABLE 2.—*Results of laboratory tests on patient in Case 1, a girl, 10 months of age

Test Antigen	Type of Test and Results: Complement Fixation	Neutralization	Hemagglutination-inhibition
Western equine encephalitis	< 1:8	300 LD_{50} or >†	
St. Louis encephalitis	< 1:8		
Mumps			1:16‡
Q fever	< 1:8		

*Onset of illness in July 1949; blood specimen examined taken on October 7, 1949.

†Serum neutralized 300 or more 50 per cent mouse lethal doses of virus—a high titer.

‡Not diagnostically significant.

The family had been living in an agricultural community in Yolo County during the six months preceding the onset of illness.

The child, on admittance to the University of California Hospital, had a high pitched cry and her back hyperextended. The hands were clenched in tetanic fashion. Reflexes were equal and hyperactive. Babinski's reflex was evoked bilaterally.

The numbers of cells in the blood were within normal limits. The sedimentation rate was zero. No abnormalities were noted in the urine. The spinal fluid pressure was 20 cm. of water. No cells were observed in a specimen of spinal fluid and results of chemical studies were normal. The result of a toxoplasmin skin test was negative. Specimens of blood from the mother and infant for examinations for toxoplasmosis were sent to the Army Medical Service Graduate School in Washington, D. C., and were reported as "negative."* Specimens of blood from the patient were also sent to the California State Health Department's Viral and Rickettsial Disease Laboratory in Berkeley for study. The results of the viral tests are summarized in Table 2. The patient's blood had the capacity to neutralize 300 or more lethal doses of the Western equine encephalomyelitis virus. No blood could be obtained from the patient's mother for testing to rule out completely the possibility that the antibody in the child had been acquired by transplacental passage. While antibody titers of this magnitude have been observed by one of the authors (E.H.L.) in adults residing in areas where Western equine encephalomyelitis virus infections are endemic, it seems unlikely that passively acquired antibody would be present in such strength after 10 months. It is considered reasonable, therefore, to relate the child's antibody titer to the present illness. The fact that no complement-fixing antibody was demonstrable is not necessarily at variance with such an interpretation, since large-scale studies now under way in the Viral and Rickettsial Disease Laboratory show that complement-fixing antibody may appear quickly, reach a peak rapidly, and then decline or disappear after a variable, but brief, period.

No abnormalities were noted in x-ray studies of the chest. A pneumoencephalogram showed the ventricles to be symmetrically dilated, without displacement or block. The changes observed were ascribed to atrophy of the brain.

The temperature ranged between 37 degrees C. and 39 degrees C. and gradually became more stable around 37 degrees C. Episodes of spasms and convulsions became less frequent. At the time of discharge from the hospital, October 20, 1949, the patient seemed to respond to the voice of her parents and the nurses.

Psychometric studies carried out before discharge showed

*The authors are indebted to Dr. Joel Warren for conducting these tests.

a mental age of 6 months, and an intelligence quotient of 56. The child was socially responsive but did not voluntarily attempt to reach for moving articles. The psychometric studies were repeated six months after discharge, approximately eight months from the onset of disease. At this time the child showed a great deal of improvement in understanding words and in designating familiar objects. She was graded as approximately one year in mental age, representing a six-month gain in mental age in the interval since discharge.

The child was referred to the Cerebral Palsy Program through the Crippled Children's Service of the California State Department of Public Health and was accepted for aid.

Second admittance to hospital. The patient was admitted to the hospital March 17, 1952, referred from a hospital in the Central Valley where she had been hospitalized because of persistent convulsions of "unknown etiology." The child had continued to show improvement. She was able to close and open her hands but seemed to have difficulty in releasing objects. She was able to move her arms with poor control—the left better than the right. She could move both legs, the left better than the right, but was unable to walk. She was unable to sit up. There was some control over bladder and bowel function. She had difficulty in chewing but none in swallowing. She was able to say a few words, but no sentences.

The head was extremely small—45 cm. in circumference. There was asymmetry of the right occiput. Flexion spasticity of both arms was noted. The reflexes were normal. There was spasticity of the right leg. The feet were held in equinus position.

Electroencephalograms showed no dysrhythmia or focal change. Pneumoencephalography on March 19, 1952, showed well-filled ventricular system and subarachnoid channels, without displacement. The lateral ventricles and subarachnoid channels were larger than normal but relatively less so than in the pneumoencephalogram taken in October. 1949.

The procedure was done with the patient under ether anesthesia. Following removal of spinal fluid and introduction of air, cardiac and respiratory activity ceased.

Postmortem examination was carried out at the Coroner's office, City and County of San Francisco.*

There was foamy blood in the right ventricle and right auricle of the heart. The brain appeared edematous. Air bubbles were seen throughout the leptomeningeal vessels. On palpation firm, ill-defined nodules were noted in the gray matter. most prominent in the left mid-cortical region. There was thickening of the floor of the left lateral ventricle and adhesive bands in the third and fourth ventricles. Multiple sections revealed firm, pale sclerotic areas measuring 1 to 2 cm. in maximum diameter in both basal ganglia. in the subcortical white matter of the left parietal lobe. and in the right temporal lobe. There was disruption of the normal architecture of the pons. The cerebellar hemispheres showed pronounced sclerotic involvement of the white matter and the dentate nuclei. The spinal cord was macroscopically normal.

Upon microscopic examination, scattered small areas of degeneration and glial proliferation were observed throughout the cerebrum. In some areas perivascular lymphocytic reaction was present. Focal accumulations of macrophages were observed in areas of a basophilic staining material. presumably calcium. In the cerebellum some loss of Purkinje cells was noted. There was congestion in the brain stem and spinal cord.

Case 2: The patient, a boy one month of age, was first admitted to the University of California Hospital July 6, 1950, with complaint of muscular spasms for the past 36 hours.

The illness had begun with the appearance of irritability and diarrhea. About 12 hours after onset of diarrhea, the child became rigid, with arms flexed and legs hyperextended. This lasted for several minutes. Similar episodes occurred frequently despite sedation. There were no clonic movements, no periods of apnea, and no cyanosis. The temperature fluctuated between 102 degrees F. and 104 degrees F. On the afternoon before admittance, a single dose of streptomycin was given on the assumption of a diagnosis of meningitis, due to *Hemophilus influenzae*. Leukocytes at that time numbered 8,000 per cu. mm. of blood.

The child had lived in Merced County before admittance to the hospital.

Upon physical examination the patient was observed to be lying limp and with the head turned to the right. The neck and back were not stiff. The reflexes were normal. The diagnosis on admittance was meningitis of unknown cause, probably bacterial.

Leukocytes numbered 7,600 per cu. mm. with 80 per cent polymorphonuclear cells. No growth occurred on cultures of the blood.

The spinal fluid was faintly turbid and contained 270 cells per cu. mm., of which 54 per cent were lymphocytes. The reaction to a Pandy test was 3 plus; the glucose content was 52 mg. and the protein content 150 mg. per 100 cc. No organisms grew on a culture of the fluid.

The results of serological tests for neurotropic viruses are given in Table 3, which shows that antibodies against Western equine encephalomyelitis virus appeared during the illness. No antibody was detected in the mother's blood, which indicates that the patient acquired antibody through active infection, and not passively from the mother.

The temperature ranged between 38 degrees C. and 39 degrees C. for the first five hospital days, following which it remained normal. A second specimen of spinal fluid was aspirated on the third hospital day. The leukocyte content was 370 per cu. mm., 90 per cent of which were lymphocytes.

By the sixth hospital day, the convulsive episodes had become less frequent and by the 16th hospital day the patient seemed considerably improved. Fluid withdrawn by cisternal puncture contained 30 cells per cu. mm., all lymphocytes; the protein content was 136 mg. per 100 cc. The patient was discharged.

Psychometric examination when the patient was two months of age showed development to a stage considered normal for infants 4 to 8 weeks of age. The results indicated definite improvement over examination shortly after admittance to hospital.

The child was examined again five months after the onset of illness and development was almost normal in all areas but gross motor abilities. There was a distinct interference in coordinated activity of arms and hands.

Upon physical examination 11 months after the illness, hyperactivity of reflexes of the left leg was noted. There was tension of the hands, in which effort seemed to impair achievement in picking up objects. A psychometric examination showed adaptive behavior at a level of 28 to 32 weeks, language behavior at 28 weeks, and personal-social behavior at 28 to 32 weeks. At a chronological age of 12 months, the development quotient was approximately 60.

The patient was admitted again on October 4, 1951. The complaint was a convulsion the day before admittance. This convulsion seemed to progress from left cheek to the left leg, and eventually included the whole body. There was moderate cyanosis. The episode lasted approximately four hours.

The patient was well-developed and well-nourished but seemed tired and irritable. The head was 43.5 cm. in circum-

*The authors are indebted to Dr. Henry Moon for permission to present the pathologic findings.

TABLE 3.—*Results of laboratory tests on patient in Case 2, a boy, 1 month of age, and on patient's mother*

Type of Test	Dates on Which Blood Specimens Were Taken and Results of Tests				
	Patient*				Mother of Patient
	July 11, 1950	July 21, 1950	Aug. 3, 1950	Oct. 5, 1951	July 28, 1950
Complement fixation					
Western equine encephalitis	< 1:8	1:64	1:256	1:64	< 1:8
St. Louis encephalitis		< 1:8	< 1:8	< 1:8	< 1:8
Lymphocytic choriomeningitis		< 1:8	< 1:8	< 1:8	< 1:8
Mumps	< 1:8	< 1:8	< 1:8	< 1:8	1:8
Neutralization					
Western equine encephalitis	400 LD_{50}		5,000 LD_{50}	1,100 LD_{50}	Negative
St. Louis encephalitis			Negative	Negative	Negative

*Onset of illness July 4, 1950.

ference—small for a child 15 months of age. The reflexes were hyperactive bilaterally.

The diagnosis on admittance was postencephalitic convulsive state.

There were no cells in the spinal fluid, and glucose and protein contents were within normal limits.

Electroencephalography showed consistently higher than normal potential with greater abnormality on the right side of the head. These findings supported clinical evidence of a right hemispheric lesion. Upon pneumoencephalographic examination it was noted that the right lateral ventricle and third ventricle were slightly dilated. The subarachnoid channels on the right side were accentuated and enlarged. The impression was that of cerebral atrophy on the right.

Phenobarbital was administered, 15.0 mg. three times a day. Convulsive episodes occurred on two occasions, in each instance associated with fever of known cause.

The patient was examined again two years after the onset of the original illness. He was walking awkwardly and seemed to have a tightness in the left hand. Hyperactive and inattentive, he jumped about on the floor in a leapfrog fashion or banged objects noisily and gleefully responded to the racket. There was no interest in sustained or associative play. Upon psychometric examination the mental development was observed to be that of a normal child about nine and a half months of age and the intelligence quotient was about 40.

Reexamination approximately two and one-half years after onset of disease showed no change from the previous study. By psychometric evaluation the child was determined to be at "imbecile" level of function. Application had been made for placement in an institution.

Case 3:* A seven-month-old white girl was admitted to the University of California Hospital in December 1952. The complaint was convulsions.

In June 1952 the patient had had a temperature of 102.6 degrees F. and was moderately sick. There were no positive physical findings and no specific therapy was prescribed. The patient was examined again by the same physician the following day and, except for high fever, no definite symptoms or physical findings were noted. Two days later the baby suddenly had a convulsion. Lumbar puncture was carried out and the spinal fluid contained 1700 leukocytes per cu. mm. A diagnosis of encephalitis was made, principally on the basis of the increased incidence of the disease at the time and also because the parents reported that the child had been bitten by a mosquito shortly before the illness began. A horse on a neighboring ranch was known to have died of encephalitis in the previous month.

*This case is presented through the courtesy of Dr. George H. Schade.

TABLE 4.—*Results of laboratory tests on patient in Case 3, a girl, 7 months of age, and on patient's mother*

Type of Test	Dates Blood Specimens Taken, and Results of Tests		
	Patient*		Mother of Patient
	Dec. 22, 1952	Mar. 2, 1953	April 6, 1953
Complement fixation			
Western equine encephalitis	1:1024	1:512	< 1:8
St. Louis encephalitis	< 1:8		< 1:8
Mumps	< 1:8		< 1:8
Neutralization			
Western equine encephalitis	1 million LD_{50}		100 LD_{50}

*Onset of illness June 30, 1952.

There were frequent major convulsive seizures for several days. Improvement was then rapid and the patient was considered well after seven days.

Thereafter the baby developed slowly. At about six months of age, she began to have sudden dropping movements of the head with sharp jerks of the arms and uprolling of the eyes. The mother said the baby did not seem alert.

On physical examination there was no evidence of abnormality of the head. The reflexes were normal, but the motor tone was poor. Moro reflex was equal and hyperactive. During the examination, several swift convulsive seizures of major intensity were observed.

Electroencephalogram showed both generalized and focal paroxysmal dysrhythmia of a wave and spike type. The focal change was in the frontal half of the right hemisphere. The interpretation was "severe cerebral dysfunction of the convulsive type." The abnormality noted was similar to that described in encephalitis of some types.

Psychometric examination showed development that would be normal at approximately six weeks of age, with a developmental quotient of 21. Virologic tests of the blood were carried out. The results are given in Table 4. Strong complement-fixation and an extremely high level of neutralizing antibodies to the Western equine virus were observed. The high titer of complement-fixing antibodies in the child, and absence of them in the mother, together with a neutralizing antibody level 10,000 times that found in the mother, indicated that the patient was actually infected with the Western equine virus, and did not acquire antibodies passively.

The diagnosis was postencephalitic convulsive state, with lightning major seizures and severe mental retardation.

DISCUSSION

The three cases described illustrate the severe neurological damage that may result from infection with the virus of Western equine encephalitis in early childhood.

In the first patient, the prolonged febrile period, lasting about eight weeks, suggests that prolonged fever may constitute a possible diagnostic clue in central nervous infection of this type. The persistent fever may also have contributed to the damage in the brain. The convulsions, which were initially ascribed to the high fever, also represent important diagnostic clues, which should be considered a definite indication for lumbar puncture. The improvement noted in the patient over a period of over two years is manifest not only in the psychometric tests but also in the comparison between the two pneumoencephalograms. Nevertheless, at the time of her death, which cannot be ascribed to encephalitis, she represented not only a serious problem for her immediate family but also a long-term problem for a number of public and private agencies. The pathological findings in this patient are of interest inasmuch as they are compatible with either a neurotropic virus disease or toxoplasmosis. The latter disease seems to be unlikely in view of the negative results of serological tests on both mother and infant and, in the patient, the negative reaction to a skin test and the normal optic fundi. Furthermore, the findings in the brain are essentially similar to those described by Noran and Baker[7] in a case of Western equine encephalitis as well as to those reported by Zimmerman[10] in cases of Japanese B encephalitis. The observation of focal sclerotic areas especially resembles the findings described by Zimmerman. The observation of deposits of calcium salts was reported by Noran and Baker and was stressed by Zimmerman. These investigators were describing material from cases in which, as in the present case, death took place long after the acute stage of disease.

Case 2 illustrates the problems of diagnosis that may be encountered in the early stages of the disease. In this case it seems quite possible that the short febrile period could have been ascribed to a successfully treated bacterial infection, in which the causative organism was not identified because an antibiotic was used before material for cultures could be obtained. The serological diagnosis in this case was enhanced by obtaining a blood specimen from the mother, which showed the absence of antibody. It was thus possible to assume that the antibody found in the specimen taken from the patient had been acquired since birth and not by passive transfer through the placenta. The pneumoencephalographic evidence of a focal destructive process correlated well with the clinical observation of early stiffness in one leg and of the nature of the convulsions. The child represents a very difficult problem for the parents to handle and will be under custodial care of the state indefinitely.

Case 3 also is illustrative of difficulties that obscure the diagnosis. The eventual solution resulted from the application of viral diagnostic tests in a case of "convulsions of unknown cause."

From the small amount of information available in the published literature, and with the cases here reported as further evidence, it appears that Western equine encephalitis may by no means be a rare cause of serious neurological damage in childhood. With the increased number of cases of human infection with this virus in 1952, and the expectancy that cases of this disease will continue to occur, physicians in California should give serious consideration to this virus, not only as a cause of acute central nervous system infection in childhood, but also as an explanation for obscure, severe neurological disturbances in the pediatric age groups.

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The Management of Strabismus

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• The original causes of strabismus and the complications that develop from efforts by a child to adjust to the condition may present a complex diagnostic and therapeutic problem. The complications of suppression, amblyopia, contractures and anomalous visual habits may become more difficult to correct than the cause of the strabismus. The longer the duration of strabismus, the more complex the problem, the more difficult the treatment, and the less the probability of functional cure. Treatment should be started early. Correction may be brought about by the use of glasses, eye patches and orthoptic training, or by operation. If anatomic abnormality prevents bringing the eyes into line by conservative means, operation should be carried out after the best results possible by these means have been achieved. Surgical treatment, too, where it is indicated, should be done early, in order that normal binocular cooperation can develop before abnormal visual habits can become established.

REQUISITE TO SECURING good binocular vision in children is to obtain a clear retinal image focused in each eye and to get the two eyes working together as a team during the formative years of visual development. Without good vision and straight eyes there is little opportunity for development of good visual habits. The longer the delay in the treatment of strabismus, the greater the departure from physiological development and the less chance for functional cure.

Physicians consulted by the parents of children with crossed eyes must be prepared to give logical answer to questions such as: What causes the eyes to cross? Will the child outgrow the condition? How long must one wait before treatment? Is the condition hereditary? Will glasses or television weaken the eyes? What about wearing a patch over one eye? Will eye exercises help? Is an operation necessary?

In order to understand the various factors involved in these questions and to appreciate the necessity for early treatment, the physician must be grounded in the principal causes of strabismus and have working knowledge of the complications that follow and of the means of treatment.

VISUAL DEVELOPMENT

Not infrequently during the first six months of life the eyes may wobble a bit and not work in perfect cooperation. With the development of good binocular reflexes, the two eyes should work together well by the time a child is six months of age. If they do not, the cause must be determined. An eye that is *constantly* crossed and remains so, even during the first few months of life, should be examined without delay. It is in the first six years of life that a child develops vision and learns to use the two eyes together. If the images in the two eyes are correctly in focus and the eyes are correctly aligned, then good visual cooperation will stabilize well by the age of six years. But during this period a child may just as easily learn bad habits of vision and stabilize the use of the two eyes together in the crossed position. The resulting poor vision and stabilized bad habits of ocular cooperation may become unchangeable once the formative period of visual development has passed, for concomitantly a host of other complications are developing—localized in the form of extraocular muscle contractures, and cerebral in the form of anomalous visual reflex patterns.

Do some children outgrow strabismus? Contrary to popular belief, few children outgrow constant strabismus. Those who do so may have cosmetically straight eyes but poor vision in the formerly crossed eye. Visual impairment of this kind may be prevented if treatment is begun before visual habits and the previously mentioned associated changes are so firmly established that there is little possibility the patient will ever develop the ability to use clear-visioned eyes together.

Although many parents seem reluctant to accept them, it is better that they be told the facts and that treatment be started early to secure normal stabilization, by whatever means necessary, lest the possibility of obtaining functional as well as a cosmetic cure be greatly diminished.

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CAUSES OF STRABISMUS

Strabismus is caused by anomalies of anatomy, of innervation, or of fusion.

Anomalies of anatomy. Correct alignment of the eyes may be impeded by weak or overacting muscles, failures in muscle development, malformed orbital structures, or contractures of ocular muscles or trauma. During the period of development any anatomical situation that prevents the eyes from pointing straight ahead naturally impedes the development of normal binocular cooperation.

Anomalies of innervation: Farsightedness, excessive convergence. Farsightedness is the principal cause of convergent strabismus in the two- to three-year age group. A farsighted child in an effort to obtain clear retinal images in each eye must make a focusing effort with the muscles of accommodation. Such an effort induces a reflex stimulation to convergence of the eyes. The effort made by a child with anatomically straight eyes to overcome farsightedness in order to obtain clear vision, may cause the eyes to cross. Such a child, if his innate binocular cooperation is strong enough, may "back up" his visual axes and realign them in the straight-ahead position despite the continued focusing effort. Such a status is a precarious one, requiring constant mental effort. The strabismus may be held latent, and become manifest only during periods of fatigue or illness when the child cannot make the effort necessary for stabilization. Such factors as measles or mumps, or debility following trauma or severe emotional upsets, may be precipitating factors but not the cause of strabismus. Glasses, perhaps used only temporarily, may cure such a case of strabismus. The glasses instead of the eyes do the focusing, and the need for effort to hold the eyes straight and clearly focused is eliminated. With growth and stabilization of such a situation, the temporary glasses may be discarded. If this simple means of correcting strabismus of this type is not used or is delayed and constant strabismus results, the host of visual complications that immediately develop may never completely and satisfactorily be eradicated.

For reasons not entirely clear, excessive ocular convergence existing usually in some hyperkinetic children, is sometimes the basis for the strabismus.

Anomalies of fusion. The inability of the brain to blend the images from each eye into a unified picture by a process called fusion may be the basis of strabismus even in eyes that are at first relatively straight and clearly focused. Normally, the innate potential for using the two eyes together must be augmented by the actual learning process of seeing clearly and by securing binocular cooperation early. In the presence of strabismus, the fusion ability may develop in such a way that stable use of the two eyes together in the crossed position becomes firmly established and difficult to reverse.

Hereditary factors are of considerable importance in any of the previously mentioned causes of strabismus and may be manifest in anomalies of anatomy, innervation, or fusion.

COMPLICATIONS OF STRABISMUS

The complications of strabismus—suppression, amblyopia, contracture and anomalous retinal correspondence—begin as soon as the eyes are constantly crossed and become continuously more firmly imbedded so long as the eye remains crossed. The complications, rather than the original cause, may become the more difficult problem in treatment.

Suppression. A crossed eye is not a "lazy eye." It is an actively ignored eye. Whereas an adult if an eye becomes crossed is constantly annoyed by the resultant diplopia, a child in the visually formative years may easily ignore it. The child immediately and continuously suppresses the lesser of the two images transmitted. This is an active inhibition, a learned cerebral process, and the longer it continues the greater the loss of visual acuity in the crossed eye.

Amblyopia. The macula of the crossed eye in unilateral strabismus cannot and does not receive the same clear image as the straight eye and therefore cannot and does not develop clear vision as long as the eye remains crossed. Moreover, whatever good vision has already developed is soon erased from the mind's eye.

Contractures. The moment an eye is crossed, the extraocular muscles are subjected to the same laws of physiology that apply to muscles in a severely and continuously flexed limb. Contractures of the striated extraocular muscles may occur in exactly the same fashion as contractures in muscles elsewhere. Contracture of an extraocular muscle is not an invariable consequence of a crossed eye, but it may occur if strabismus is not corrected; and if it does an operation that might have been averted becomes a necessity.

Anomalous retinal correspondence. Stable cerebral binocular cooperation in the strabismic position (anomalous retinal correspondence) may become fixed. A constant angle of strabismus in an eye with poor vision and suppression, with contracted muscle, if occurring during the period of visual development, may lead to the establishment of a stable "bad habit" of visual cooperation which may become a barrier to functional cure.

The four kinds of complications mentioned may be wholly averted with proper early treatment. With time, diagnosis of the complications and causes becomes mixed and confused, the treatment more difficult, and a functional cure less probable.

Treatment of the causes and the complications of strabismus is carried out by use of glasses, eye patches, orthoptic training, or surgical operation, singly or in combination.

Glasses. The image in each eye should be clearly in focus in order to provide adequate stimulus for fusion by the brain. Glasses alone may straighten the eyes in certain cases of strabismus by relieving an excessive focusing effort in far-sightedness, thus relieving convergence stimulation and permitting the eyes to become correctly aligned with clear images. Wearing glasses does not weaken eyes, nor can it be shown that they have any effect whatsoever upon the subsequent course of the refractive error. In strabismus, glasses are an essentially useful device to obtain a certain result and, if the refractive error is not too great, may be discarded when stable ocular cooperation has been secured. The viewing of television does not harm an eyeball, cause nearsightedness, or anatomically damage the eye. In children who are susceptible to strabismus or who have precarious binocular cooperation as evidenced by intermittent strabismus, the situation may be aggravated by fatigue, general or localized. Television, along with prolonged focusing on near objects and inadequate rest, should be regarded with any other fatiguing or debilitating condition as a possible precipitating or aggravating factor in strabismus only in susceptible children.

Patching. Putting a patch over the straight eye causes the crossed eye to see with its fovea and thus gain or regain vision. Usually a crossed eye will fixate with its fovea, regardless of the causes or the complications of strabismus, if forced to do so by total occlusion of the other eye. Less than total constant occlusion is for the most part useless. A patch used during the formative visual years may restore the vision in the crossed amblyopic eye to normal. In later years, the patch over the normal eye will restore the vision in the crossed amblyopic eye only to the point of vision it once attained during the period of development, but no more. For patching to be successful, the retinal image in the uncovered eye must be clear, aided by glasses if necessary. Success in getting young patients to wear a patch is directly proportional to the enthusiasm and persistence of the physician. He must give the parents a lucid explanation of what is being done and why, and must impress upon them the extreme importance of gaining or regaining vision during the critical formative period. In alternating strabismus, where good vision has developed in each crossed eye because each eye is used at one time or another, putting a patch over one eye and then the other alternately, is an excellent way to make the child forget the bad habits of binocular cooperation. The value of a patch therefore is threefold: to obtain and regain vision, to secure alternate fixation, and to eliminate anomalous visual habits.

Orthoptic training. Orthoptic training ("eye exercise" is the popular term) is not for the purpose of strengthening the muscles, but to help the child to unlearn bad habits of vision and to learn the normal habits of binocular cooperation. Of itself, it rarely cures strabismus and never cures nearsightedness, nor accomplishes the many wonders with which it previously has been credited. It is an adjunct in the treatment of selected patients between 5 and 12 years of age who will cooperate in the exacting procedure necessary. It is in this age group, in which strabismus usually has been present for some time, that the problem of treatment becomes more complex. Unfortunately, orthoptic training frequently has been misused in many cases of strabismus in which it should have been obvious from the outset that a cosmetic cure, and not a functional cure, was all that was possible.

Operation. Surgical operation is necessary for the correction of the anatomical elements of strabismus. The purpose is to correct the alignment of the eyes so that binocular cooperation may develop normally. Since it is desirable that the eyes be straight as soon as possible after the binocular reflexes are capable of development physiologically, surgical treatment if necessary for the alignment of the visual axes should be carried out between the first and second years of age in many cases. It should not be done, however, until after the variable elements of the strabismus have been corrected by conservative means or it has been determined that conservative treatment will not be of benefit. In cases in which it is patently impossible to secure normal binocular cooperation, the aim of operation is a satisfactory cosmetic appearance.

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Histamine Treatment of Multiple Sclerosis

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• Histamine was administered intravenously or by iontophoresis to 19 patients with clearly established diagnosis of multiple sclerosis. In each of the three classifications of the disease (stationary, progressive, acute), no significant difference in improvement between treated and control groups was observed. (Controls were recorded cases in which treatment was identical except for histamine therapy.)

In four of seven cases of progressive disease further deterioration occurred despite histamine therapy. Of the other three patients one died a year later and another returned to hospital in three months with severe symptoms which were not relieved on further histamine treatment.

In two patients with remittent disease new symptoms (presumably caused by new lesions of the central nervous system) developed while histamine therapy was in progress.

In cases of stationary disease histamine treatment was of no benefit.

Reports are given of six typical cases in which histamine treatment was used.

AT THIS WRITING no method of treatment has been reported that is generally accepted as altering the course of multiple sclerosis. In 1936 Brickner[5] after an exhaustive search of the literature reported over 100 types of treatment. Putnam[16] and Schumacher[18] have since reviewed more recent methods of treatment. Putnam stated that "the proportion of improvement reported to follow all of the forms of treatment for which reasonably adequate data were available was almost exactly that in which the initial symptom or symptoms disappeared spontaneously, namely 48 per cent." Schumacher's review of drug therapy (1950) listed two broad categories: (1) Those treatments aimed at prevention or improvement of lesions in the central nervous system, and (2) symptomatic remedies (e.g., prostigmine, curare, etc.). In the former group he discussed vasodilators, ganglionic blocking agents, anticoagulants, circulatory stimulants, vitamins and vaccines among others. Of all these the one receiving widest attention at present is probably histamine.

The use of histamine in the treatment of multiple sclerosis was introduced by Horton and his colleagues in 1944.[10] The drug was given intravenously by slow drip once or twice daily for varying periods of time (up to several weeks), both in the hospital and to outpatients. Eighteen of 24 acute cases were reported "well" over a follow-up period of not longer than 15 months; 3 others in the acute group were "improved." Of a group of 78 chronic cases, 36 were reported improved. Abramson[1] in 1949 advocated the use of histamine by iontophoresis for multiple sclerosis, and Jonez[11, 12] in a series of articles since 1948 has reported an impressive number of cases treated by both these methods. Unfortunately these reports do not set forth clear criteria for improvement. It would seem that in many cases the patient's subjective evaluation is the principal basis for stating that a course of treatment has had a satisfactory effect on the disease process.

Two theoretical justifications are given by proponents of the use of histamine against multiple sclerosis. These rest upon two different theories regarding the etiology of the disease: (a) allergic and (b) vascular.

The theory that multiple sclerosis is a form of allergy of the tissues of the central nervous system has very few proponents even among allergists. Kennedy[13, 14] has written several papers describing clinical syndromes apparently due to allergic phenomena which resembled multiple sclerosis sufficiently closely to cause erroneous diagnoses. He emphasized their rarity, however, and there was no question that these cases could be differentiated from multiple sclerosis. However, the fact that allergic disorders of the neuraxis do exist is made much of by the supporters of the allergic etiology of multiple sclerosis. Another buttress for their position is provided by the work of Ferraro[7, 8] and others who have produced demyelinating lesions in animals by techniques of experimental anaphylaxis.

On the other hand, the question is raised quite reasonably: Why, if an allergic factor is a major cause, is there not more evidence for it in the his-

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tories of thousands of unquestioned cases of multiple sclerosis? Baer and Sulzberger[4] found the incidence of allergies in a group of patients with multiple sclerosis to lie in the high normal range. And Schumacher[18, 19] in his exhaustive review of this subject stated, "Clinical observation has not revealed a clear-cut instance of onset or exacerbation of multiple sclerosis due to known preceding contact with a substance to which the person was presumably or known to be hypersensitive."

The second theoretical reason for the use of histamine in multiple sclerosis is in its vasodilator effect. The argument is based on a twofold assumption:

1. That the acute lesions of multiple sclerosis are caused by vascular spasm, and that insofar as the vasospasm and its attendant ischemia can be relieved the symptoms are reversible.

2. That histamine causes a significant increase in the blood flow through cerebral tissue in man, and is therefore an effective weapon against the fundamental lesion—ischemia.

It is beyond the scope of this presentation to enter into detailed analysis of the validity of these assumptions, but it should be emphasized that as yet they remain only assumptions. In favor of the vascular theory of pathogenesis of multiple sclerosis is the report of Franklin and Brickner.[9] These writers observed arteriolar spasm in the retinas of 18 of 21 patients with multiple sclerosis. Improvement was reported in approximately half of these with the use of vasodilator drugs like papaverine and amyl nitrite. By extension it has been hypothecated that the lesions in the central nervous system in multiple sclerosis are due to localized vascular spasm. On the other hand Scheinker, on histologic grounds, has made a persuasive case for an opposing view, namely that vasoparalysis is the cause of the initial lesion. Equally careful workers in the field of neuropathology have looked for and failed to find any evidence that multiple sclerosis is exclusively or even predominantly vascular in origin.

The question of the action of histamine on cerebral blood flow must likewise be regarded as still open to debate. There is no doubt that use of the drug effects a flushing of the skin accompanied in many cases by headache. Moreover, Weiss and co-workers (1932) observed that a rise in spinal fluid pressure (presumably due to vasodilatation) occurred within a few seconds after intravenous injection of histamine in man.[21] In the same report they stated that histamine infusion produced in the exposed brain of patients undergoing operation a flushing of the pial vessels, increased amplitude of brain pulsation, and visible swelling of the brain surface. The transitory character of these phenomena was emphasized. Within three minutes the appearance had reverted to normal although the drug was still being given. The retinal vessels were also examined during histamine infusion and no change in their caliber was detected. This is in harmony with the findings of other observers that histamine may act as a dilator on some vessels and as a constrictor on others.[17] Weiss concluded that a transient dilation took place in the cerebral blood vessels, but that the drug was converted into an ineffective or inert substance very shortly after injection into the blood stream. Tucker and co-workers[20] studied the cerebral blood flow in nine cases of multiple sclerosis before and during administration of histamine, using the nitrous oxide technique of Kety and Schmidt. They found a fall in mean arterial blood pressure and a decrease in cerebral vascular resistance, but no associated changes in the cerebral blood flow beyond the extremes of normal unless associated with concomitant changes in the arterial and venous carbon dioxide content.

Alman, Rosenberg and Fazekas[3] studied the effect of histamine on cerebral blood flow in normal subjects and reported that although cerebrovascular resistance was moderately reduced during histamine infusion this was balanced by a lowering of mean arterial pressure, so that there was no significant alteration in cerebral blood flow.

To summarize, it must be concluded that thus far evidence is conflicting and opinion divided on the two questions involved: The vascular etiology of multiple sclerosis, and the effect of histamine on cerebral circulation in man.

SCOPE AND PURPOSE

The study here presented was undertaken* as a direct result of the unusual public interest aroused by the reports appearing in recent years in the lay press regarding histamine treatment for multiple sclerosis. None of the reports on this form of treatment presented adequate documentation of objective clinical signs that would enable an impartial reader to judge the value of the treatment. It seemed worthwhile, therefore, to seek evidence for such evaluation.

Histamine was administered to an unselected series of patients admitted to the Veterans Administration Hospital, Oakland, in whom a clear-cut diagnosis of multiple sclerosis seemed, to the neurological staff and consultants, established beyond question.

On reviewing recently the first 20 cases, which are the basis for this report, the authors were impressed by two facts: That new symptoms were observed in at least two patients while they were receiving daily histamine treatments, and that in four patients nervous disability progressed steadily during treatment.

*At the suggestion of Dr. Schaller.

Although intending to continue the study, the authors believe that these facts constitute an important criticism of the efficacy of the drug in the treatment of multiple sclerosis. For that reason a preliminary report is being made.

METHOD OF STUDY

The 19 patients (one admitted twice) ranged in age from 21 to 62 years. There were 18 males and 1 female; 18 white and 1 Negro. The duration of disease varied from six months to 30 years. A group of controls was established from the records of unselected patients with multiple sclerosis who had been previously studied on the same ward, receiving identical care except that they did not receive histamine.

Treatment consisted of routine ward nursing care, house diet supplemented at times by vitamins, physical therapy as indicated, and histamine medication. Some of the earlier patients in the series received histamine three to four times weekly, but the majority received it six times weekly, and in a few cases a continuous intravenous infusion was carried out for the first 48 to 72 hours. As no rapid relief of acute symptoms was obtained through the latter technique it has not been adopted as a routine. The histamine was given for the first week or two of treatment by slow intravenous drip (30 to 45 drops per minute) of histamine acid phosphate (2.75 mg.) in 250 cc. of normal saline solution, and thereafter the drug was given daily by iontophoresis by the method described by Abramson, which may be summarized as follows:

A pad of flannel is saturated with about 10 cc. of a histamine solution varied in concentration from 0.25 to 1.0 per cent according to the resultant flush obtained on previous administration. The flannel pad is applied to an arm or thigh and contact is made with an electrode of aluminum foil held by a rubber pad and strap against a flat copper plate positively charged. The other electrode is usually applied to the back, the patient lying on a table. The current is usually no faster than 8 milliamperes (average 5 milliamperes). The usual length of treatment is 10 to 15 minutes. If the patient complains of gastric distress he is given an antacid mixture before treatment.

All patients were examined by one of the authors on admission, at frequent intervals during hospitalization, and at discharge. They were rated according to the weighting scale described by Alexander,[2]* a useful multiphasic check-list for quantitative evaluation of progress. It is preferable that all ratings and examinations be made by the same physician.

An attempt was made in each case to obtain a fairly detailed history and to classify the disease as progressive or remittent. A further classification was made according to whether, in the period immediately prior to admission, (1) the disease had been stationary for some months, (2) the disease was steadily (usually very slowly) progressive, (3) acute exacerbation followed a period of remission or inactivity, or (4) the disease was improving after recent exacerbation.

*The scale lists about 45 neurological defects covering all phases of the complete bedside neurological examination and gives each point a weighted score according to the degree of severity.

TABLE 1.—*Outcome of multiple sclerosis in patients treated with histamine and in control cases.*

	No. of Cases*	Improved	Unimproved	Worse
STATIONARY†				
Treated with histamine	5		5	
Control	7		7	
PROGRESSIVE†				
Treated with histamine	7		3	4
Control	3		2	1
ACUTELY EXACERBATED†				
Treated with histamine	8	6	2	
Control	6	6		

*Twenty treated cases (19 patients) and 16 controls.
†Status of disease immediately prior to the current hospitalization.

RESULTS

The results are summarized in Table 1. The authors fully realize that this small series of 20 treatments would carry little weight in an attempt to establish the efficacy of a therapy used against a disease with as many variable factors as multiple sclerosis. However, the purpose of this presentation is not to establish a point by weight of statistics but to draw attention to the fact, as it appears, that in some cases, despite intensive histamine therapy given under hospital conditions, new lesions may develop and those already present may progress.

The first two case reports here presented exemplify the development of new symptoms during the course of daily histamine treatments. In the other cases there was measurable progression of already existent disability during the course of histamine treatment.

CASE REPORTS

CASE 1. A 24-year-old Negro male was admitted to the hospital in January 1952. He had had remittent disease since 1947 which had gradually reduced him to a paraplegic state. The disease had been stationary for six months prior to admission, when the principal finding was weakness of the lower extremities. Voluntary control of sphincters was not affected and the cranial nerves, upper extremities and cerebellum were not involved. The abdominal reflexes could not be elicited. The knee and ankle jerks were hyperactive and the Babinski sign was produced on the right side. There was some hypesthesia to all modalities of sensation below the knees. The pressure and dynamics of the spinal fluid were normal. In a specimen of the fluid one lymphocyte was observed; the protein content was 41 mg. per 100 cc.; there was no reaction to a complement fixation test, and the colloidal gold curve was 4433210000.

Histamine was given daily by intravenous drip from February 15; from March 5 to June 9 it was given by iontophoresis. On March 1, after two weeks of daily histamine injections, the patient had incontinence of urine for the first time. On examination it was found that weakness of the

right lower extremity had progressed. Within five days bladder control returned and there was no further complaint in this respect for the duration of hospitalization, nearly six months. The condition of the right leg improved more gradually over the next two to three weeks, but at the time of discharge it had not improved over the status on admission. On March 24 the patient complained of numbness of both hands. Sensory testing indicated no loss of sensitivity to pin-prick, touch or temperature. but vibratory sense was slightly diminished over the fingers of both hands and the sense of position was impaired to such a degree that when the patient's eyes were closed slight searching movements (so-called "pseudo-athetosis") of the outstretched fingers were made. This finding and its subjective component gradually subsided over the next few weeks. At the time of discharge in September 1952 the rating of the disease was essentially the same as it had been on admission.

Case 2. A 38-year-old white male was admitted to the hospital in December 1951 with a history of remittent disease since 1945. The initial symptom was shimmering vision. (A physician who examined him at this time had noted nystagmus.) This was followed some months later by a transient scotoma in the right eye. This cleared and there were no symptoms for about three years, after which, for several weeks, the patient had dysarthria, locomotor ataxia and return of the visual difficulty. This also cleared up and he remained fairly well for two years. For a week before the present admission there were painful sensations in the legs, clumsiness of the fingers, thick, scanning speech and diplopia. On examination nystagmus on lateral gaze to both right and left was noted, and also slight clumsiness on the finger-to-nose and heel-to-knee tests; the gait was very slightly ataxic. The Romberg sign was not present. The superficial abdominal reflexes were present and there were no signs of abnormality in the pyramidal tract.

Histamine diphosphate was given daily intravenously from December 18 to January 2 and by iontophoresis thereafter. On January 10 when the patient was discharged, he was improved. The diplopia had cleared, the nystagmus was slight and unsustained, speech was almost normal, and the patient walked without obvious ataxia. Histamine iontophoresis was continued daily in the outpatient department. On January 15, after the daily histamine treatment, there was an attack of severe vertigo, nausea and marked increase in diplopia and ataxia. He was readmitted to the hospital, where he lay flat on his back unwilling to move his head because this seemed to provoke vomiting. There were gross lateral nystagmus bilaterally, dysarthria, and poor coordination on the finger-to-nose and heel-to-knee tests, symptoms previously noted, and also difficulty in starting urination and numbness over the left side of the face. There was hypesthesia to pin-prick and to cotton on the left side of the face, and the left corneal response was hypoactive—a new finding.

Histamine therapy was continued and symptoms again gradually subsided over the next six weeks. Six months later there had been no recurrence.

Case 3. A 33-year-old veteran was admitted to the hospital in March 1951. He had had remittent disease for eight years, beginning with paresthesia of the face and hands followed later by ataxia and weakness of the lower extremities. Despite temporary improvement after each attack, other symptoms had developed—diplopia, clumsiness of the hands, progressive loss of position sense and increasing ataxia in the lower extremities. For two weeks prior to admission, the patient had noted a substantial increase in the ataxia and diplopia.

On initial examination no remarkable physical defect was observed except for the neurologic symptoms: severe ataxia of the lower extremities; clumsiness and dysdiadochokinesis of both upper extremities, worse on the left; intention tremor and past-pointing on the finger-to-nose test bilaterally; nystagmus on lateral gaze bilaterally; weak response of the right sixth nerve and subjective diplopia on looking to the right; impairment of superficial sensation of the left lower extremity and absence of vibratory sense below the hips bilaterally. All the deep reflexes were hyperactive and the lower extremities were moderately weak. There was a sustained ankle clonus on the right and the Babinski sign was present bilaterally. The patient was unable to walk on admission and required a wheelchair to get about.

Intravenous injections of histamine three times weekly were begun on March 29. Two weeks later the patient complained of increased weakness in the legs with uncontrollable flexor spasms. On reexamination, including detailed muscle testing, a significant decrease in strength of the major muscle groups of the right lower extremity was observed. For example, on admission the strength of the right iliopsoas muscle had been rated at 60 per cent of normal, that of the right hamstrings at 75 per cent, and that of the right anterior tibial muscle group at 90 per cent. On May 22 all were rated at 40 per cent. Histamine treatment was continued, but no improvement was noted until early in June when spasms gradually diminished and strength increased. Physical therapy was continued, and the patient was eventually able to walk on crutches for short distances. At the time of discharge, on June 19, however, after nearly four months of histamine therapy, there was no significant improvement over the status on admission as measured by the rating system.

In summary, there was temporary exacerbation of symptoms during the course of treatment, and although some improvement followed, it did not exceed the status on admission. The episode observed during this hospitalization resembled in many ways the exacerbations and remissions that had occurred over the eight years before this hospitalization.

Case 4. A 26-year-old white male on admission to the hospital in October 1950 gave a history of an unremitting course of varied neurological symptoms for about 17 months prior to admission, starting with weakness and unsteadiness of gait and followed by visual blurring and bladder disturbances a few weeks later. There had been steady weakening of the legs until the patient could not walk except on crutches and with difficulty. Weakness of the upper extremities developed, and also dysarthria, dysphagia and severe incoordination and ataxia of all voluntary movement.

On admission the vision was so poor that the patient could read only headline print. There was temporal pallor of both optic discs. Lateral gaze was impaired bilaterally, and there was coarse nystagmus in both lateral and upward gaze. The tongue deviated to the right with some atrophy and furrowing of the right half of the tongue and fibrillation. Speech was slurred and scanning. The gag reflex was absent and there was occasional difficulty in swallowing. Except for weakness of the right central facial muscles the cranial nerves were intact. Both upper and lower extremities were markedly uncoordinated and ataxic. There was past-pointing and terminal intention tremor on the finger-to-nose test bilaterally. Rapid alternate movements were done very slowly and clumsily. There was severe spastic weakness of the lower extremities and some weakness of the hand grip bilaterally with mild atrophy of the intrinsic muscles of the right hand including the thenar and hypothenar eminences. The abdominal reflexes were absent throughout. All the deep tendon reflexes were very hyperactive but approximately equal. Hoffmann and Babinski signs and sustained ankle clonus were present bilaterally. No sensory abnormality was noted except for some loss of sensitivity to pin-prick over the right lower extremity. Spinal fluid was under normal

pressure and dynamics and contained 11 white cells per cu. mm., and 78 mg. of total protein per 100 cc.; results of complement fixation were negative and the gold curve was 4555321000.

Physical therapy was begun and histamine was given by intravenous drip three times weekly for a total of 20 treatments. During this period the patient complained voluntarily of increasing weakness of the lower extremities and increasing unsteadiness and ataxia, and finally asked that the treatment be discontinued since he felt that his condition was worse. On reexamination in March 1951 no new abnormalities were observed, but there had been no improvement in those noted on admission, and weakness of the lower extremities had increased so that whereas on admission the patient had been able to walk with difficulty on crutches, at the time of his discharge he was confined to a wheelchair.

Case 5. A 31-year-old white man first had "numb feelings" of the feet ten months before admission. This symptom was followed by stumbling, ataxic gait and blurring of vision. These symptoms became steadily worse over the ensuing months. and in addition clumsiness of the left hand and finally spastic paraplegia and impairment of sphincter control developed.

He was admitted in April 1951 and remained in the hospital nearly four months until August 1951. Findings on examination included bilateral horizontal nystagmus, pallor of the left optic disc, hypalgesia over the left side of the body and the right side of the face, marked intention tremor, scanning speech, ataxia of the left upper and both lower extremities, and spastic weakness of the lower extremities. The abdominal reflexes were not elicited and the Babinski sign was present bilaterally. The spinal fluid contained no cells; the protein content was 45 mg. per 100 cc., and the colloidal gold curve was 5432100000.

Histamine was given intravenously three times weekly from April 23 to August 8. At the time of discharge there was no quantitative improvement in any of the symptoms listed above and progression in most. The degree of deterioration is indicated by the following estimates of muscle strength:

	—Percent of Normal*—	
	April	July
Left gluteus maximus	70	40
Left hamstrings	75	45
Left toe flexors	30-45	10
Left anterior tibial muscle	55	25
Left toe extensors	30-55	10-30

The clinical effect was that in the interval the major muscle groups of the left lower extremity had lost the power to move the weight of the extremity against gravity.

Case 6. A 39-year-old white veteran was admitted to hospital in March 1951 with a history of slowly progressive disease without remission of about a year's duration, starting with weakness of the right lower extremity.

On admission there was coarse nystagmus on lateral gaze bilaterally. There was spastic weakness of both lower extremities, more severe on the right, although the patient was able to walk with a cane. Bilateral clumsiness and tremor on the finger-to-nose test and incoordination of fine hand movements were observed. The reflexes were hyperactive throughout, with sustained clonus at both ankles. Babinski and Hoffmann signs were present bilaterally, and the superficial abdominal reflexes were absent throughout. There was slight impairment of vibratory sense over the lower part of the right lower extremity.

The spinal fluid was under normal pressure and dynamics and was clear. It contained two lymphocytes per cu. mm., and the protein content was 86 mg. per 100 cc.; there was positive reaction to a Pandy test but complement fixation was negative. The gold curve was 1111000000. No abnormalities were noted in a hemogram, on urinalysis, or in a myelogram made shortly after admission.

Histamine was given intravenously three times weekly for ten weeks. During hospitalization the weakness of the lower extremities increased steadily. There were no acute exacerbations of any symptoms, but the patient slowly lost the ability to walk even with crutches and at the time of discharge required a wheelchair to move about. Principally because of this crippling the disability rating rose from 106 on admission to 156 at discharge in July.

This case illustrates progression of disease, unaffected by histamine treatment, during hospitalization.

*As recorded by the standard method of grading.

DISCUSSION

In cases of multiple sclerosis with a history of recent exacerbation there is generally a high percentage of improvement but, as a comparison of the treated cases with control cases indicates, this remains true regardless of histamine therapy. It is generally accepted that a variable but definite proportion of the disability following acute exacerbation can be ascribed to reversible disorder (edema, vasoparalysis?) and will improve in time.

Classification of cases as acute, progressive or stationary permits more accurate prediction of the outcome in each case. Certainly a much more accurate prognosis can be made for each attack if the history of the disease is ascertained by careful questioning.

By such history-taking it can be observed that the disease in some cases has a rather malignant course, growing worse almost without interruption from the onset of symptoms to early death. In these cases obviously the prognosis is poor with any known form of therapy; in four of seven progressive cases in which the authors administered histamine, deterioration was evidenced by changing neurological symptoms and overall increase of disability. In the other three of these seven cases the disease remained essentially unchanged during hospitalization. It might be concluded that histamine altered the downhill course, but the authors believe that the period of observation was too short. It has been learned that one patient died, a year after treatment, of decubitus ulcers and progression of multiple sclerosis. Another was readmitted to the hospital three months after discharge, and despite a second intensive course of histamine his condition has grown steadily worse.

In a third group of cases the disease is apparently stationary. In these the patient's condition, after a few years of remittent disease, remains unchanged for a long time and is apparently not affected by any treatment. Most of the patients in this group are older, and their general health is excellent; they are usually better adjusted mentally to their condition

and are content with symptomatic relief. No difference was noted, among patients in this category, between those treated with histamine and those studied as controls.

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The NARTB brought to our attention the television code which states: "When dramatized advertising material involves statements by doctors, dentists, nurses or other professional people, the material should be presented by members of such profession reciting actual experience or it should be made apparent from the presentation itself that the portrayal is dramatized."

The NARTB has expressed complete willingness to cooperate with us in every possible way.

It is requested that any televised sequences you may note and feel to be in conflict with the code be reported to the Public Relations Department of the A.M.A., and we, in turn, will take the matter up with the NARTB.

—The A.M.A. Secretary's Letter

The Allergic Aspects of Multiple Sclerosis

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• *For the past ten years there has been an increasing acceptance of the theory that allergenic reaction is a causative factor in multiple sclerosis. In the study of a series of patients the author traced many attacks directly to allergenic insults. When the offending substances were removed, a quiescent period often ensued. The severest symptoms of multiple sclerosis were most often associated with food allergens, the moderately severe with molds and fungi and the least severe with pollens and chemical offenders.*

The earlier the diagnosis and the beginning of treatment, the better the chance of arresting the disease and preventing serious crippling conditions. In cases of longer duration where the patient has become crippled or bedridden, physical therapy with relaxing medication is of great value.

As BASIS FOR DISCUSSION of the allergic aspects of multiple sclerosis it is necessary first to establish the present day concept of allergy and to define multiple sclerosis. The allergy of von Pirquet and Schick, as described in their monograph of 1906, is far different from the ideas of today as expressed by leading allergists. The classic interpretation of protein sensitivity rather easily forecasts mold and dust insults, but hardly forecasts allergy as it is understood today. As to multiple sclerosis, this designation is unfortunately used frequently for undiagnosed neurological diseases, especially of the demyelinization types. The generally accepted principal diagnostic symptom of this disease is that of remissions and exacerbations, with involvement of more than one portion of the central nervous system.[37, 43, 44, 45, 62, 67] However, in only about 60 per cent of cases diagnosed as multiple sclerosis is this feature present. In the cases in which remissions and exacerbations occur, the first complaints[43] often seem bizarre[24] and only a few objective abnormalities are noted by careful examination. The symptoms frequently disappear spontaneously. A patient may have a number of attacks of transient numbness or paralysis before the development of definite signs of organic disease of the brain or spinal cord.[10, 12, 14, 15, 16, 21]

ETIOLOGIC THEORIES

There are a number of etiologic theories[35] as to the cause of multiple sclerosis, among them being vitamin or mineral deficiencies, viral infections,[38, 50] emotional instability and glandular disturbances. Applying the yardstick of remissions as being needed definitely to establish the diagnosis, most of these etiological theories can be ruled out. It is hard to visualize any of these causes striking at intervals and leaving the patient apparently normal between exacerbations, with remissions lasting up to 20 years. Kennedy,[39, 40, 41] in 1936, directed attention to allergy as a possible basis in the etiologic delineation of multiple sclerosis. He stated: "Its episodes, its remissions, the curability of its most acute crisis, its attack on the optic nerves, its neglect of sensory paths—all these things greatly resemble the happenings of localized allergic edemas after the central nervous system has come under fire. Further, the recent plaques in the rare autopsies of acute cases are not sclerotic; they are infiltrations by fluid of the nerve tissue surrounding blood vessels."

That same year Putnam[46] pointed to the essential similarity between encephalomyelitis and multiple sclerosis. In 1941 he expressed the view that the origin of encephalomyelitis is in some sense an allergic reaction, adding that "it seems not unreasonable to suppose that an instability of the clotting mechanism of the blood might be one aspect of allergy."[47]

Ferraro[20] introduced the concept that demyelinating diseases, especially of the acute form, are the expression of a cerebral allergic reaction. He based his contention on the fact that in these conditions the fundamental histologic features of cerebral allergy are present.

DIAGNOSIS

Before a definite diagnosis of multiple sclerosis is made, at least five of the cardinal symptoms of this disease should be present. These symptoms should also involve more than one part of the central nervous system. The cardinal symptoms are:

1. Nystagmus.
2. Pallor of the temporal halves of the optic disks.
3. Diplopia.

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The author, who was Medical Director of the Multiple Sclerosis Clinic, St. Joseph Hospital, Tacoma, Wash., died October 11, 1953.

4. Ocular palsies.
5. Speech disturbance.
6. Ataxic tremor of the upper extremities.
7. Past pointing.
8. Loss of abdominal reflexes.
9. Increase of tendon reflexes.
10. Spasticity of one or both upper or lower extremities.
11. Urinary incontinence.
12. Spastic, ataxic or spastic-ataxic gait and station.
13. Babinski's sign.
14. Remissions leading to disappearance of part or all of the symptoms.

Multiple sclerosis is a disease of adult life, initial attacks occurring usually between 20 and 40 years of age; rarely after 45 and seldom before 15 years.

At the Multiple Sclerosis Clinic, St. Joseph's Hospital, Tacoma, the histories of 2,000 consecutive cases of multiple sclerosis, definitely diagnosed by accredited neurologists or by physicians at well-known general clinics, were reviewed and, on the basis of symptoms, classified in various categories. (Table 1).

For the purposes of this presentation the 1,199 cases (Table 1) in which there was history of complete remissions and the involvement of more than one part of the central nervous system, can be designated as cases to which the theory of allergic cause can be applied. It is to be noted that only about 60 per cent of the 2,000 cases satisfied these requirements. It is quite possible that in others the initial attack may be so severe and so damaging as to prevent the patient from ever becoming symptom-free again.

TABLE 1.—*Classification, after review of records, of 2,000 consecutive cases previously diagnosed*

	No. cases	Per cent
Typical multiple sclerosis with remissions	1,199	59.9
Typical multiple sclerosis without remissions	349	17.5
Familial and atypical	100	5.0
Hereditary ataxia	48	2.4
Amyotrophic lateral sclerosis	51	2.6
Primary and posterior lateral sclerosis	233	11.6
Others	20	1.0
Total	2,000	100.0

THEORY AS TO PATHOLOGIC CHANGES

To understand the major role of allergy in multiple sclerosis, one must have knowledge of the pathologic changes that occur in acute and subacute cases. They can be considered analogous to urticarial wheals, scattered at various times,[29,49,55,58] throughout the entire central nervous system. The skin and the central nervous system originate from the same embryological layer, namely the ectoderm.[34] Because of this, it is reasonable to assume that the entire central nervous system might be susceptible to the same allergic insults that the skin is. When urticarial wheals occur on the skin or along the intestinal tract, there is no serious damage, as there is no pressure exerted. However, in a bony cavity such as the skull or vertebral column there is little room for expansion. Therefore, through pressure the blood supply to certain areas is obliterated; and if this pressure continues long enough,[56] the destruction of tissue in these areas occurs with resulting scar or sclerotic plaques. If the urticarial wheals disappear and the pressure is removed soon enough, the symptoms that have resulted from pressure disappear: a remission occurs. If pressure continues, a demyelinizing effect results, with irreversible changes.

For the last ten years there has been an increasing acceptance of the theory that allergenic reaction is a causative factor in multiple sclerosis; and no research project can be complete that does not take this into consideration. Rowe[51,52,53] has many times called attention to the manifestations of neurological allergic disease, stating that in his opinion foods are the worst offenders. The author has used Rowe's elimination diets for many patients with multiple sclerosis, especially those with extreme sensitivity to foods. The results have been very good in many cases.

EOSINOPHIL DETERMINATIONS

In considering the theory of allergenic cause of multiple sclerosis, the question of eosinophil content in the blood arises. Before the advent of the chamber method of counting eosinophils, the author carried on a rather elaborate set of studies of eosinophil content in multiple sclerosis. In a period of two years, eosinophil determinations were made on 5,164 specimens of blood from 271 patients with multiple sclerosis, including 116 just beginning the treatment described in later paragraphs. In these studies it was observed that (1) as formerly reported by other investigators,[9] eosinophil averages in multiple sclerosis are usually normal; (2) under treatment with histamine by any method, eosinophil content typically increases, usually reaching a maximum between the first and third months (range 0 to 29 per cent; average 5.2 per cent) ; (3) when determined monthly over a year of histamine therapy the eosinophil content was usually within normal range but almost always there was one fluctuation or more to a higher level.

The development of the chamber method of counting eosinophils antiquated older techniques for quantitative work, and the differential count studies were discontinued. In one series of 203 cases, determination of eosinophil content by the modified Randolph technique was carried out at the beginning and end of a two-month standard course of treatment. In this series the average proportion of eosinophils before treatment was 1.58 per cent with a range of 0 to 10.6 per cent. After treatment with histamine for two months the average was 5.52 per cent with a

range of 0 to 17 per cent. Medians for both were almost identical with the averages.

Some question is raised as to the concept of allergic disease as a histamine imbalance of the body that occurs during the state of hypersensitivity. However, the eosinophil continues to be the most baffling of all blood components. There is the factor of temporary storage from the circulation and the factors of production and loss. In the study described above most of the patients were in a state of fair remission when the determinations were made. Where there were increases, they could not be definitely correlated with exacerbations. But where there were temporary increases of the eosinophils, there appeared to be in some cases a connecting link. The content of eosinophils, however, might also be influenced by the rate with which they passed out of the blood stream into the areas of shock tissue.[11, 61]

SCRATCH TESTS

In dermal scratch tests of over 2,200 patients with demyelinating diseases, almost all were noted to be sensitive to some group of allergens, such as foods, molds, epidermal material or pollens. The author uses the scratch test as a gauge in the study of the allergenic background of patients with multiple sclerosis—taking into account the probability that as sensitized persons they may exhibit the allergic phenomena only when they are "triggered" by emotional factors.[7, 18, 48, 60, 65, 66]

EMOTIONAL FACTORS

It is well known that in the majority of patients with multiple sclerosis there are indications of emotional instability. The author is of the opinion that most have neuroses.[42] This resolves itself into the chicken-or-the-egg proposition. Does the neurosis occur first, or do the symptoms of multiple sclerosis come first? That is a question very difficult to answer, as it is hard to state definitely where subjective symptoms of multiple sclerosis begin and neurosis stops. At any rate, after carefully analyzing the cases, the author believes that any allergic insult, including instances in which emotional upset is a factor, can trigger the initial attack. There is no doubt that a great many patients have their first exacerbation as the result of trauma, accidents,[23] fright, worry, great joy, emotional upset or other stress—just as angioneurotic edema will occur as the result of any of these.

In treatment, emotional factors should be gone into thoroughly and rationally with the patients, with explanation to them of the degree to which their emotional upsets influenced the course of the disease.

Once urticarial whealing within the central nervous system occurs, whatever the allergenic factor, recurrences may be brought about by any other kind of allergic insult as well as the original one.

Relation of Severity of Disease to Specific Allergens

In correlating results of scratch tests with the multiple sclerotic condition of the patient, it was noted that the vast majority of patients who had particularly severe symptoms of multiple sclerosis had strong sensitivity to foods; those with less severe disease reacted strongly to molds and fungi; those who were least disabled had strong sensitivity to pollens, and in many instances of patients in this latter category it was noted that the episodes of exacerbations were related to the seasons when the pollens to which they were sensitive were afloat.

It is easy to see why patients sensitive to food had the severest cases of multiple sclerosis: They were exposed daily the year round to offending items. Two patients who were strongly sensitive to orange had minor but definite exacerbations whenever oranges were peeled in the same room they were in. There are many reports in the literature both from allergists and neurologists of cases in which persons sensitive to various foods had pronounced neurological symptoms whenever they ate or handled any of them.[32, 51, 52, 53] Many of the patients observed by the author complained of increased nystagmus, spasticity and many other symptoms of multiple sclerosis following the ingestion of certain foods.

It has been noted for years that there seem to be geographic factors in multiple sclerosis: The disease is much more prevalent in the northern parts of Europe and North America than in the southern parts of these continents.[31, 54] The same is true of the regions of Australia and New Zealand farthest from the equator. The disease is practically unknown in southern Asia and in the semitropical and tropical parts of the world. The places of greatest prevalence are those in which milk and cereal products such as wheat and rye—outstanding among allergens—form a high proportion of the food intake.

Swank[59] made a study of the diets of the various peoples of Europe before, during and after World War II with reference to multiple sclerosis. His conclusions were that the highest incidence of new cases of multiple sclerosis was in those countries where the largest amounts of milk and butter were used. Although he attributed the phenomenon to the relatively high consumption of animal fat, the correlation might be better explained on a basis of milk as an allergenic offender.

Ehrentheil, Schulman and Alexander,[20] working at the Boston State Hospital Multiple Sclerosis Research Clinic, reported on 65 cases in which an intensive study of sensitivity to foods was made. They

noted that rye, wheat, oats and orange juice were the worst offenders. (This corresponds with the results of the author's studies, except that chocolate, eggs and milk were found to be greater offenders than orange juice.)

In summarizing the Boston Clinic's study, Ehrentheil and co-workers stated:

"1. Ophthalmic tests with 25 different food proteins in patients suffering from multiple sclerosis showed a very high percentage of positive reactions to rye and wheat. This finding proved statistically to be significantly higher than in the random population.

"2. Allergen-free diets based on a carefully taken allergic history and on the results of ophthalmic tests brought about favorable therapeutic results in 31 per cent of the cases.

"3. In 12 cases the temporary reintroduction of the previously omitted food resulted in temporary exacerbations of symptoms."

TREATMENT

The treatment administered by the author is primarily that which would be used in the general management of a patient with any allergic condition. This includes instruction as to the avoidance of offenders, the use of allergenic extracts and the administration of histamine,[8, 13, 25, 26, 27, 28] at first intravenously and then by iontophoresis,[1, 2, 3, 4, 5, 6] or repository injections.[33, 36, 64] Histamine is the most powerful dilator of intracranial vessels known.[30, 57] Therefore, it covers that need. At the same time, when given properly it is the universal hyposensitizer and the recommended treatment for acute and chronic urticaria. Acute and subacute cases of multiple sclerosis usually respond to histamine therapy. Where there are irreversible changes in the chronic cases, little can be expected from hyposensitization other than eliminating exacerbations or rendering them less severe.

In addition to antiallergic therapy, everything available that has proven efficacious in the care of patients with multiple sclerosis is used, especially physical therapy, curare, vitamins and gonadotropic hormones. For the past six years curare has been used in a repository menstruum, and in that time more than a million doses of the material have been given, most of it injected by the patients themselves in the same manner as insulin. No undesirable reaction has been observed or reported.

The author firmly believes that antiallergic management is the most effective method of dealing with multiple sclerosis, especially acute and subacute cases. A complete, harmonious understanding must exist between the patient and the physician, be he an allergist or a neurologist. The patient must be taught to watch for events of stress, offending foods and other situations that occur in connection with symptoms. When he can himself connect exacerbations with some allergenic offense that he can avoid, fear of the disease and the future subsides.

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Multiple Sclerosis

Its Frequency and Distribution, with Special Reference to San Francisco

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• *Epidemiologic surveys of multiple sclerosis were conducted in 1949 in San Francisco, Winnipeg, Boston, New Orleans, and Denver. Reports of cases for 1939 through 1948 were obtained from record offices, hospitals and clinics, and private physicians. The basis for the observations was the group of "probable" cases among residents.*

In San Francisco these probable cases in residents numbered 415; however, in only 146 of these was the onset between 1939 and 1948. Of the 143 patients who were white, 51 were male and 92 female. The average annual incidence based on these figures was 2.1 per 100,000—1.5 for males and 2.6 for females.

Prevalence, based on probable cases in residents on January 1, 1949, was 29.7 cases per 100,000 population—21.2 for males and 38.1 for females.

Mortality was 0.7 per 100,000 population—0.9 for females and 0.6 for males.

In comparison of the findings for San Francisco with those of other cities, both the incidence and the severity of the disease appear to decrease from north to south.

AN EPIDEMIOLOGIC SURVEY of multiple sclerosis was conducted in San Francisco in 1949 as one of five sponsored by the National Multiple Sclerosis Society "to determine the extent of multiple sclerosis in the United States and Canada and to study the influence of climate and race on the distribution of the disease."

The detailed description of the method of study and the results of the surveys in the other cities (Winnipeg, Boston, New Orleans, and Denver) have been published.[1, 2]

METHOD OF STUDY

Approval of the survey was first obtained from the San Francisco County Medical Society, the local hospital association, and the deans of both medical schools in San Francisco. Office space for the survey was provided by the Stanford University Medical School, and a member of the department of neurology* supervised the local survey. Medical students from both Stanford University and the University of California were employed and trained in abstracting hospital and clinic records and in contacting physicians and reviewing their records.

Reports of cases of multiple sclerosis diagnosed or suspected and of deaths were obtained from all registered hospitals, including outpatient departments, from clinics and nursing homes, and from the local office of vital statistics for the ten-year period 1939 through 1948. In addition, physicians in private practice were requested, by letter and telephone, to provide reports on cases observed in the previous five years and to identify any patients who were known to be still alive regardless of when they were last treated. No patient was seen in person.

Each case was classified as "probable" or "possible" according to the opinion of the physician making the most recent diagnosis. "Probable" cases were those in which clinical evidence was consistent with the diagnosis while other possibilities were reasonably excluded; "possible" referred to those cases in which no single neurologic diagnosis had been established.

In each of the cities surveyed, the survey coordinator† reviewed all case reports to eliminate duplication and non-resident cases. In all the cities except San Francisco each important source of case reports was rechecked about two years after the original survey and newly diagnosed resident patients whose symptoms had started before 1949 were added to the survey. At the same time data on patients whose diagnosis or residence had not been clarified in 1949

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This study was supported by a grant from the National Multiple Sclerosis Society.

The directors of the survey are indebted to the physicians of San Francisco as well as to the hospitals, clinics, and nursing homes who made their records available for confidential study; to the San Francisco City and County Department of Public Health for access to death certificates, and to the group of medical students who collected the basic morbidity data.

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†Kurland.

were reviewed with the patients' latest physicians, and many inaccuracies in the earlier reports were thereby corrected. Unfortunately, as the San Francisco County Medical Society, for some unstated reason, objected to this later case review, it was not carried out in this city. Therefore the data for San Francisco must be considered less reliable than those for the other cities, although the original case reports collected in San Francisco, on which the tabulations were based, were more complete than those in the other cities before the case review. This uncertainty as to the thoroughness of the study makes it difficult to compare the results from San Francisco with those from the other four cities.

RESULTS IN SAN FRANCISCO

Originally reports on 562 cases were submitted. Of these, 119 were excluded because of non-residence, insufficient identification, uncertainty or change of diagnosis, or other factors. Also excluded were 28 other cases because no information other than the death certificate was available.

Of the remaining 415 cases, 316 (including 55 in which the patients had died in the ten-year period) were classified as "probable" and 99 as "possible." The ratio of probable to possible cases is similar to that reported in the other cities.[2]

Rates of incidence, prevalence, and mortality are based on the probable cases only, as in the other cities. The number of cases in which the disease developed in San Francisco in the ten-year period 1939 through 1948 forms the basis for the average annual incidence rates; the number of such patients residing in the city as of January 1, 1949, is used in the determination of the prevalence ratio; the number who died in the city between 1939 and 1948 is used to determine the average annual mortality rates.

Survival to January 1, 1949, of the patients with probable cases in San Francisco is shown in Table 1. The living or dead status of about 13 per cent of the reported patients was unknown. (In the other cities this unknown group averaged about 6 per cent.) These patients were not counted in prevalence and mortality tabulations.

Incidence and Incidence Rates

Of the 316 probable cases in the San Francisco study, in 36 the patients were residing elsewhere at the time of onset of symptoms. The residence or the time of onset was unknown in an additional 21. In the remaining 259 cases, the patients were residing in San Francisco at the time of onset of symptoms, which in 113 was prior to 1939. The average annual incidence is based on the 146 patients in whom onset occurred in the years 1939 through 1948.

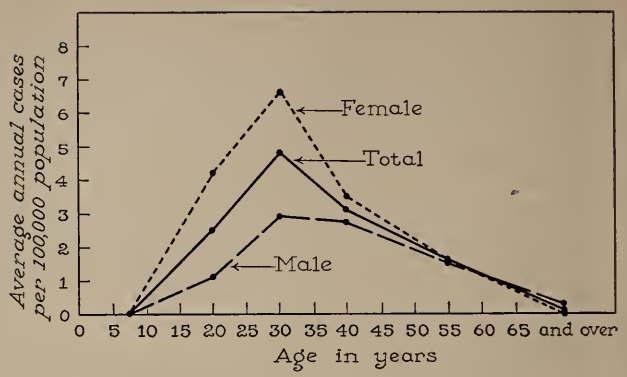


Chart 1.—Average annual incidence rates of multiple sclerosis per 100,000 population by age and sex in white population of San Francisco, 1939 through 1948.

TABLE 1.—*Distribution of patients with "probable" multiple sclerosis in San Francisco study on January 1, 1949*

Status	Number		Per cent	
Living	219		69.3	
In San Francisco		206		65.2
Elsewhere		13		4.1
Died between Jan. 1, 1939 and Jan. 1, 1949	55		17.4	
In San Francisco		45		14.3
Necropsy confirmed		7		2.2
Elsewhere		3		0.9
Status unknown	42		13.1	
Total cases	316		100.0	

Of the 146 patients, 3 were non-white—all males. Of the 143 white patients 51 were male and 92 were female. The average annual incidence per 100,000 population for the ten-year period based on these cases was 2.1—1.5 for males and 2.6 for females. The ratio of females to males was 1.7 to 1.

Chart 1 shows the average annual incidence for the white population by age and sex. A sharp peak is noted for females aged 25 through 34 years; the curve for males also reaches its maximum at this age but drops off more gradually.

The average annual incidence for nonwhites, based on the 3 cases counted and on 1950 census figures for San Francisco, was 0.4 per 100,000 population—0.7 for males.

PREVALENCE RATIOS

Prevalence of a disease in a population group is determined by dividing the number of cases by the number of persons in the group. The result, adjusted to some base number (usually 100,000), is a specific figure per unit of population and a basis for comparison among groups.

Prevalence ratios in this study were based on the probable cases of 73 white males and 133 white females reported as living in San Francisco on Janu-

ary 1, 1949. The prevalence ratio per 100,000 for the white population was 29.7—21.2 for males and 38.1 for females. The ratio of females to males was 1.8 to 1.

No probable case of multiple sclerosis, as defined for the study, was found among the 80,000 nonwhite population on January 1, 1949. It is not certain whether the study in San Francisco is as complete for nonwhites as for whites. Reports were obtained on two Chinese born in China in whom onset of disease was at ages 29 and 41 years, respectively, while they were residing in San Francisco. On one who died in San Francisco in 1948 the diagnosis was reported as confirmed by autopsy; the other was not counted in tabulations since no follow-up could be made beyond 1942. Three cases reported in Negroes were not tabulated since two were only "possible" and in the "probable" case follow-up extended only to 1945.

The nonwhite population of San Francisco in 1940 were 4,800 Negroes and 27,000 of other races, mostly Chinese. By 1950, the Negro population had increased ninefold to 43,500 and the other nonwhite groups had increased 40 per cent to 37,900, whereas the total increase in the white population was only 14 per cent.

This disproportionate increase in the San Francisco nonwhite population in the last ten years seems to be an important factor in the low rates for the group. It is likely that much of the increase in the nonwhite population is due to the migration of persons seeking employment, who would probably be in good health and because they were newer residents would not have been exposed for as long a period to any possible local disease-provoking factor as the "permanent" white population of the San Francisco area. It is also possible that differences in the medical care or reporting of cases among the large permanent Chinese population might be another factor in the difference in rates.

In Chart 2, the prevalence ratios by age for white males and white females are presented. For both sexes a peak is reached at the ages of 35 through 44 years, the age distribution curves resembling those for other cities.[2]

Deaths and Death Rates

Among white persons with probable cases, 51 died—0.7 per 100,000 population. Thirty were females (0.9 per 100,000) and 21 were males (0.6). The ratio of white females to white males was 1.5 to 1.

From 1939 through 1948, the diagnosis of 7 of the 52 probable cases for which both morbidity reports and death certificate transcripts were obtained was confirmed by necropsy. Of these 7 cases, 1 was that of the Chinese referred to previously.

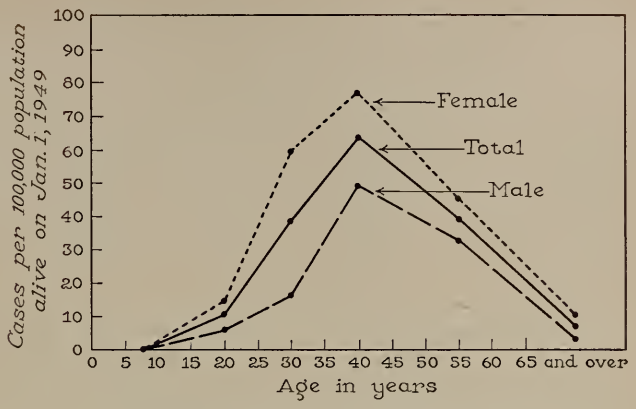


Chart 2.—Multiple sclerosis. Prevalence ratios per 100,000 population by age and sex. (Based on probable patients known to be living in San Francisco on January 1, 1949.) White population, San Francisco.

There were 28 additional deaths (15 of white males and 13 of white females) reported as due to multiple sclerosis for which no morbidity reports were submitted. Twenty-one of these deaths occurred during the period 1939 through 1944, and for most of these cases no other data were available. In some cases, the physician who reported the death was unable to supply additional information or was no longer residing in the area. It can be safely presumed that in most of the cases the onset of symptoms was prior to 1939, in which event they would have been excluded in determination of incidence rates. As the patient had died before 1949, they would not be counted in the prevalence determinations. The mortality rates alone are perhaps deficient as a result of the omission of them, but the same method was employed in the other cities in the survey and comparison of rates with the other cities is, for the most part, unaffected.

COMPARISON AND CONCLUSIONS

Comparison of results in the cities studied in the survey may permit conclusions regarding the findings in San Francisco.

1. The incidence rates for 1939 through 1948 in Boston, Winnipeg, and Denver were about three times as high as in New Orleans. The value for San Francisco was similar to that for the more northern cities (Table 2).

2. Prevalence ratios were also about three times as high in Boston, Winnipeg, and Denver as in New Orleans. The value for San Francisco was somewhat lower than for Boston, Winnipeg, and Denver, but still more than twice that for New Orleans (Table 2). The nonwhite prevalence ratio was also relatively high in Boston and low in New Orleans. In both Denver and San Francisco, the nonwhite prevalence ratio was lower than the value for whites, but in both cities the nonwhite population was relatively small

TABLE 2.—Comparison of rates of incidence, death and prevalence of multiple sclerosis in five cities (all rates per 100,000 population)

Community	Average Annual Incidence Rates, 1939-1948	Average Annual Death Rates, 1939-1948	Prevalence Ratios, January 1, 1949
Boston	2.6	1.1	41.3
Winnipeg	2.2	0.9	41.8
Denver	2.3	*	38.2
San Francisco	2.1	0.7	29.7
New Orleans	0.8	0.2	12.9

*See text.

and had increased many times more rapidly in the last decade than had the white population.

3. The mortality rates from 1939 through 1948 in Boston and Winnipeg were four to five times as high as in New Orleans, and in San Francisco three times as great as in New Orleans. In Denver, where the mortality data were found to be deficient,[2] the mortality rate was only twice as high as that of New Orleans.

4. In all but one instance, the rates and ratios in each city were higher for females than for males. The possible reason for this difference is discussed elsewhere.[1]

5. In all cities, except New Orleans, reports of some cases of multiple sclerosis were confirmed by autopsy. (These included one report on a Chinese in San Francisco and one on a Negro in Boston.)

From these findings it can be concluded that multiple sclerosis is much less prevalent in New Orleans than in the other cities, and that the disease occurs in all races.

6. In a study of mortality due to multiple sclerosis in 1947, the death rate was found to be two to three times higher in Canada and the northern United States than in the South;[1, 3] it has been postulated that this difference in frequency with geographic latitude is somehow associated with climate. It is unknown, however, whether the frequency of multiple sclerosis diminishes gradually from north to south on this hemisphere or whether at some critical latitude or isotherm the incidence drops sharply, as it might in the absence of an important causative factor of the disease. It was hoped that the results in San Francisco might indicate whether or not there is a gradual diminution in the rates with latitude, for such information might clarify the nature of this unknown geographic factor.

Several points must be considered for further interpretation of the findings here summarized.

The rates reported in Table 2 cannot be considered as absolute measures of the frequency of multiple sclerosis but are mainly of value in comparing the relative frequency in the different cities. It is not easy to interpret mass statistics of a disease which is rare and at best difficult to diagnose, especially when the compilation of such statistics may be subject to differences in hospital record systems, in the cooperation of physicians in different communities, and in the completeness of reports on cases and deaths. By selecting large medical centers, these factors can be equalized to some extent; special studies on the completeness of the data indicate that the surveys, at least in Boston, Winnipeg, and New Orleans, were equally thorough. On recent clinical review of the cases in Winnipeg and New Orleans good correlation was obtained with the prevalence results reported here for Winnipeg, whereas in New Orleans the prevalence was found to be even less than reported in this presentation.[4]

The computation of rates and ratios depends not only on the number of cases in the numerator but also on the population base in the denominator. The greater rate of growth of the more western communities is another, although presumably minor, influence.

Further, there is greater uncertainty regarding the relative accuracy of the rates for San Francisco than for other cities in which the case review was carried out. The effect of the case review on the rates depends on whether the number of new cases discovered exceeds the number excluded because of errors in diagnosis and in reported residence. Experience in the other cities indicated that the case review did not greatly alter the total rates and ratios, but the effect on rates for subgroups separated by age and sex was in some instances appreciable.

With these qualifications in mind, the following interpretations may be made of the rates of prevalence, mortality, and incidence of multiple sclerosis in San Francisco in relation to those in the other cities:

1. *Prevalence:* The value for San Francisco was somewhat lower than the high values for the northern communities but still more than twice that for New Orleans (Table 2). Since prevalence is based on the number of cases in a city on a particular date, without regard to the residence at time of onset of symptoms, an important factor which may influence this ratio is the relative immigration and emigration of patients in the total population. So far as is known, San Francisco has not been recommended for any particular therapeutic benefit for patients with multiple sclerosis; nor is any other factor known which might cause the migration rate of persons with the disease to differ from that of the rest of the population. Taken at its face value, the prevalence ratio for San Francisco would suggest that there is a gradual decrease from north to south in the frequency of multiple sclerosis.

2. *Mortality:* As the average duration of disease

before death is 20 years, it is difficult, in a city which has increased in population so rapidly as San Francisco, to deduce reliably any short-term trends. Under these conditions, for instance, mortality rates, which are based on the number of patients dying in a recent period divided by the total population, would be very low unless the immigration of persons with advanced multiple sclerosis were in proportion to that of the general population.

3. *Incidence:* The comparison of incidence rates is probably the best measure of relative endemicity of a disease since it is computed by dividing the locally occurring cases from a recent period of years only by the current population figures. On this basis it would appear that multiple sclerosis is about equally endemic in Boston, Winnipeg, Denver, and San Francisco (Table 2). Such a finding suggests that the "northern" causative factor which seems to be absent from New Orleans may be present in San Francisco as in Denver.

It must be concluded, then, that either the method of study was not sufficiently sensitive to indicate small (but perhaps important) differences in the frequency of multiple sclerosis in San Francisco and the more northern cities studied, or that there is no appreciable difference. It does appear, however, that multiple sclerosis is a considerably greater neurologic problem in San Francisco than in New Orleans. The cause of this difference is not known.

Mayo Clinic.

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Investigation of Non-Service-Connected Cases

UNDER A NEW PLAN about to be put into effect by Veterans Administration, the Department of Justice will be called in to handle cases of suspected fraud concerning the "inability to pay" declaration of veterans with non-service connected disabilities. VA itself is forbidden by law to look behind the veteran's statement that he can't afford private treatment. According to testimony introduced in congressional hearings, this has resulted in many abuses.

The new arrangement provides that if a VA hospital manager has good grounds to suspect that the veteran's claim of indigency is fraudulent, he will confer with federal law enforcement officials. An investigation will then be conducted by the Justice Department, the regular law enforcement arm of the federal government. If the facts justify prosecution, the case will be taken to federal court. There the government will have to prove that the veteran in question set out "premeditatedly, purposefully and intentionally" to defraud the government.

Also nearing the announcement stage is a tightening up of the questionnaire filled out by veterans with non-service connected conditions when they apply for VA hospitalization. VA medical and legal officials have been working on the new wording since last spring.

It is expected the revised form will call on the veteran to supply more information about his finances.

—A.M.A. Washington Letter

The Importance of Potassium After Operation

GEORGE C. HENEGAR, M.D., Oakland

• *A deficiency of potassium in a patient after operation is manifest clinically by anorexia, malaise, apathy, weakness, abdominal distention and hypochloremia.*

Many patients who have had a prolonged disturbance in nutrition may have a "subclinical" hypopotassemia.

Prophylaxis by means of replacement of the potassium excreted daily in the urine is the ideal treatment.

When the clinical picture of potassium deficit develops, the amount of the potassium ion needed for replacement should be calculated on the basis of the total amount of water in the body of the patient.

BENEDICT,[1] IN 1915, observed a change in the urinary excretion of potassium in the state of starvation but the significance of the phenomenon was not appreciated until Darrow and Gamble[3-8, 14] began reporting upon studies of electrolyte balance. Gradually an understanding of the role of potassium in health and disease evolved and today surgeons are keenly aware of the complications that result from deficiency or excess of this ion.[2,10,11,12,13,14,15,17,20,21]

To better understand the clinical problems involved in deficiency or excess of potassium in the body, certain fundamentals must be made clear. Potassium is present in both intracellular and extracellular fluid. The quantity in intracellular fluid normally is 115 milliequivalents per liter, and in extracellular fluid approximately 5 milliequivalents per liter. Therefore, although a change in the amount of potassium in the serum is of some significance, it is only a rough estimate of what changes are occurring within the cells. In ordinary circumstances there is a constant excretion of 60 to 90 milliequivalents of potassium in the urine and 10 milliequivalents in the feces per day. This remains fairly constant in spite of the intake except when the body is greatly depleted. At such times, the urinary and fecal excretion is lowered only slightly.

In the course of 24 hours the average adult secretes approximately 8,200 cc. of fluids into the digestive tract. This greatly exceeds the total volume of plasma (some 3,500 cc.) but a state of equilibrium is maintained by the reabsorption of much of this fluid. The amounts of the various digestive secretions entering the digestive tract of an adult human are shown in Table 1.[14] The ionic loss of these secretions is shown in Table 2. In a healthy person there is no actual loss from the gastrointestinal tract other than the fecal excretion of 10 milliequivalents of potassium per day. However, in patients with intubation, vomiting, diarrhea or intestinal fistula, the intestinal fluid loss becomes significant: Both water and electrolytes are lost. If, in the replacement of the total fluid loss, only dextrose in water and/or saline solution is given and no attempt is made to replace the potassium, a pronounced drop in the serum potassium level with the characteristic clinical features will result. This may be overlooked if serum potassium determination is carried out during the dehydrated state and the content is found to be "normal." Not until the amount of extracellular fluid is returned to near normal will there be an appreciable decrease in the potassium content of the serum.

This brings up the question of total body water and its various partitions. Recent studies[9, 18] have shown that the muscle mass as compared to the fat mass plays a very important role in determination of total body water. Lean persons have relatively more water in the body than do obese persons. Another

TABLE 1.—*Total volume of digestive secretions produced in 24 hours by adults of average size*[14]

Saliva	1,500 cc.
Gastric secretion	2,500 cc.
Bile	500 cc.
Pancreatic juice	700 cc.
Intestinal secretion	3,000 cc.
Total	8,200 cc.
Blood plasma volume	3,500 cc.

TABLE 2.—*Average gastrointestinal tract losses expressed in milliequivalents per liter*[21]

	Sodium	Potassium	Chlorides
Gastric secretion	59.0	9.3	89.0
Small bowel secretion (Miller-Abbott suction)	104.9	5.1	98.9
Ileum secretion (Miller-Abbott suction)	116.7	5.0	105.8
Ileostomy (recent)	129.5	16.2	109.7
Cecostomy	79.6	20.6	18.2

Part of a Symposium on Nutrition and Electrolytes presented before the Section on General Surgery at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

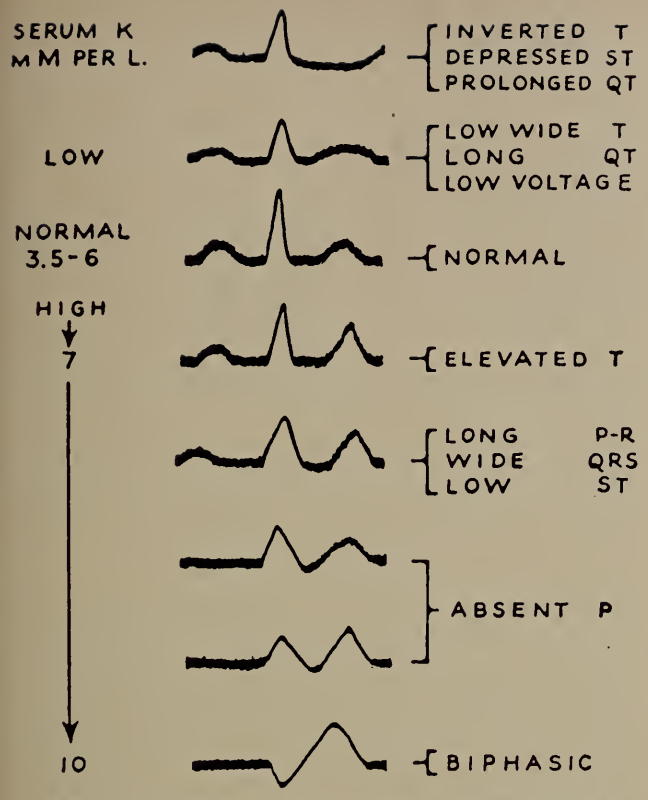


Figure 1.—Changes in the electrocardiographic tracings produced by alterations in serum levels of potassium. Darrow, D. C., and Pratt, E. L.[8]

point to be kept in mind is the change in per cent of body water produced by fat loss in the patient who has lost weight due to illness or secondary to catabolism of fat in trauma or surgical operation. These points are brought up to emphasize the need for a knowledge of total body composition before the electrolyte needs can be calculated with any reasonable accuracy.

The electrocardiographic changes produced by hypopotassemia frequently are characteristic (Figure 1). Moderate potassium deficiency is associated with a low, wide T wave with prolonged QT and low voltage in all the leads. As the potassium is further depleted the T wave is inverted, ST depressed and QT further prolonged. On the other hand, elevation of the potassium above normal causes an elevated T wave with progression to a biphasic pattern as the potassium reaches toxic and lethal levels. Electrocardiographic tracings are less helpful in cases of mild to moderate aberration of potassium levels unless a base line is established with preoperative tracings. This is particularly true when operation is done on older patients in whom some unrelated electrocardiographic variation from normal may already exist.

CLINICAL FEATURES OF HYPOPOTASSEMIA

Before the present understanding of hypopotassemia many patients had serious postoperative complications owing to the condition and some even died in a state so aptly termed "la maladie post-opératoire" by Leriche.[16] Postoperative apathy, lethargy, anorexia, weakness, abdominal distention and hypochloremia are characteristic symptoms. Time was when such symptoms, particularly after operations on the gastrointestinal tract, often led to reoperation on the assumption that there was intestinal obstruction, which only aggravated the electrolyte problem.

The following case illustrates the problems of diagnosis and treatment of hypopotassemia:

REPORT OF A CASE

A 61-year-old Chinese male was admitted to the hospital on September 27, 1952, with a history of "indigestion" of ten years' duration and diabetes of eight years' duration. Before he was admitted, active duodenal ulcer with considerable obstruction was diagnosed. It had not been relieved by conservative treatment.

Nasogastric suction was started soon after the patient was admitted and 2,000 cc. of gastric fluid was aspirated in the first twelve hours. A modified Sippy regimen was prescribed and aspiration to remove gastric residue was carried out daily.

On October 1, 1952, the content of chlorides in the serum was down to 85 milliequivalents per liter and the carbon dioxide content up to 32 milliequivalents per liter. The alkalosis was considered to be due to the loss of chlorides in the aspirated gastric juice and it was corrected by intravenous infusion of ammonium chloride solution.

Vagotomy and gastroenterostomy were done October 3, 1952. This operation rather than subtotal gastric resection was decided upon because the duodenum was densely adherent to the inferior surface of the liver in the region of the extrahepatic biliary tree. An hour after operation the sugar content of the blood (fasting) was 204 mg. per 100 cc.

Convalescence was uneventful until on the tenth postoperative day the patient began to vomit. Approximately three liters of fluid was vomited in 12 hours. The following morning it was noted that the output of urine for the preceding 24 hours had been only 250 cc. Clinically the patient did not appear to be dehydrated. The abdomen was soft and non-tender and peristaltic activity was normal. Obstruction secondary to an edematous gastroenterostomy stoma was considered likely. Therefore not all the fluid lost was replaced.

The patient was given, by vein, 1,000 cc. of 5 per cent Aminosol,® 1,000 cc. of 5 per cent dextrose in 0.45 per cent saline solution, to which one 10 cc. ampule solution of "K-M-C,"* one 2 cc. ampule vitamins (Berocca®) and 10 units of regular insulin were added. This supplied a total of 77 milliequivalents of sodium, 25 milliequivalents of potassium, 10 milliequivalents each of calcium and magnesium and 102 milliequivalents of chloride ions. After the infusion the total protein content of the blood was 7.66 gm. per 100 cc., of which 4.32 gm. was albumin and 3.34 gm. was globulin.

On the following day, October 15, the patient appeared to be severely dehydrated. He was weak and singultus had developed. In the preceding 24 hours the total intake of fluids was 2,340 cc. with the output 3,070 cc. Of the output,

*"K-M-C," a solution prepared by the Ingram Laboratories, San Francisco, contains 25 milliequivalents of potassium, 10 milliequivalents of magnesium, and 10 milliequivalents of calcium in 10 cc. distilled water.

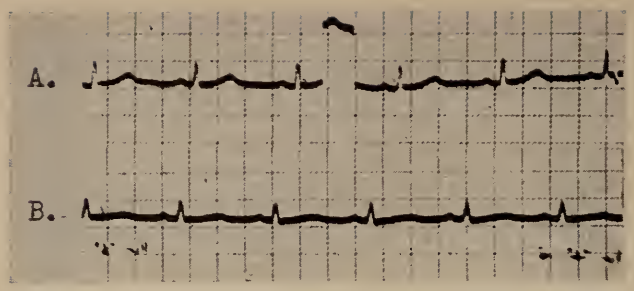


Figure 2.—Case 1, Electrocardiographic tracings: *A.* Preoperatively on June 6, 1952. *B.* Tracing made on Oct. 16, 1952 showing a low T wave with a prolonged Q T interval.

100 cc. was urine, 2,170 cc. was withdrawn by nasogastric suction and 800 cc. was calculated as insensible loss.

The content of electrolytes in the serum on that day was as follows: Potassium 5 milliequivalents, chlorides 100 milliequivalents, carbon dioxide 46.3 milliequivalents (see Table 3). The patient was alkalotic and dehydrated, but because the potassium content in the serum was normal, only 50 milliequivalents of potassium was added to the parenteral fluid for that day. The total fluid intake was 4,830 cc., of which 500 cc. was whole blood, while the fluid output approximated 2,550 cc., of which 850 cc. was urine and 900 cc. was gastric aspirate.

Next day the patient appeared semi-comatose and had "fish mouth respirations." A metabolic disturbance secondary to diabetes mellitus was considered but this seemed unlikely. Although the sugar content of the blood was 417 mg. per 100 cc., alkalosis was present and potassium deficiency seemed the most probable cause. This diagnosis was supported by comparison of T waves in an electrocardiogram taken at that time with the T waves in a tracing made preoperatively (Figure 2).

It was learned that the patient had not received all the fluids ordered for him in the preceding 24 hours. The total intake was 3,180 cc. and the output 1,410 cc. of urine, 730 cc. of gastric aspirate and 800 cc. of insensible fluid loss. Therefore, 75 milliequivalents of potassium, well diluted, was given slowly by vein.

On October 17 the patient was still dehydrated and thirsty but no longer semicomatose. The body weight was 109 pounds. There appeared to be very little fat in the subcutaneous tissues. Ninety-five milliequivalents of potassium in four liters of fluid was ordered for the next 24-hour period.

Next day the patient was considerably improved. The gastric residue was 500 cc. Mineral oil was given orally to see if it would pass through the stoma. The potassium content of the serum was 3.55 milliequivalents, of chlorides 90.1 milliequivalents, and of carbon dioxide 48 milliequivalents. The potassium deficit was approximately 1.5 milliequivalents per liter. An infusion of 110 milliequivalents of potassium in 3 liters of fluids was given.

On October 19 the oil passed through the gastrointestinal tract. The patient began to take a soft diet. In addition to the oral intake, 105 milliequivalents of potassium in 3 liters of fluids was given by vein.

Next day the patient felt well and the content of electrolytes in the serum was nearly normal. The body weight was 118½ pounds. Two days later the patient was discharged from the hospital.

TABLE 3.—*Summary of blood chemical determinations in milliequivalents per liter in case herein reported*

Date	Sodium	Potassium	Chlorides	Carbon Dioxide	Potassium Therapy (mEq.)
October 1			85.0	32.0	
October 2	143				
October 6			93.2	31.4	
October 15		5.0	100.0	46.3	50
October 16					75
October 17		3.05	90.1	48.0	95
October 18		3.55	90.1	37.5	110
October 19					105
October 20		4.4	109.0	25.0	

DISCUSSION

Several features that are common in postoperative metabolic problems were present in the case here reported. The patient had nutritional inadequacy of long standing due to an obstructing lesion in the duodenum. This led to "subclinical" intracellular potassium deficiency which was probably secondary to low content of protein in the cells.

If postoperative convalescence had not been complicated by the loss of a large amount of fluid and electrolytes through vomiting, the potassium deficiency might have been corrected spontaneously. Owing to the loss of fluid and the dehydration of the patient, the potassium deficiency was not detected when the serum content was determined the following day. It became apparent, however, in determinations carried out after fluids had been infused to replace the fluids lost, and the patient lapsed into a state typical of hypopotassemia, characterized by semicoma, anorexia, abdominal distention and extreme weakness. The potassium deficiency was not as great as might have been expected in light of the serious clinical condition of the patient. The potassium depression was 1.95 mEq. per liter. With the lowered body weight (109 pounds), the total deficit was only 58.5 mEq. Although approximately that amount was replaced in the three days after deficiency occurred, the amount of potassium which was being excreted in the urine daily was not taken into account. Urinary output was so low that there was a tendency toward over-caution against supplying too much potassium. This proved to be in error. It was not until enough potassium to replace that excreted, as well as to make up the deficit in the serum, was supplied that the patient recovered. Although the electrocardiogram taken at the time of potassium deficiency was of some value in diagnosis, it probably would not have been had there been no preoperative tracing to compare it with. By itself the tracing shows very little that might be considered characteristic of potassium deficiency.

Avoiding pathologically low potassium is usually no problem if the patient can begin adequate oral intake within the first three to five days postoperatively. In some cases, such as the one cited, the patient may have unrecognized low potassium that may

not be manifest even on serum potassium studies. If kidney function is good, patients may safely receive 60 to 90 mEq. of potassium daily in parenteral fluids until such time as they may take adequate fluid or food by mouth.

If considerable potassium deficit develops, replacement must be governed by the degree of deficit. Since the potassium ion is so distributed in the body that it exists in the intracellular fluid in a much higher concentration than in the extracellular fluid, replacement should be considered on the basis of total body water. For example, a deficit in the serum of 2 mEq. per liter, in a patient with body weight of 50 kilograms would be replaced in the following fashion: If the patient is lean, body water may be assumed to make up 60 per cent of the body weight, or 30 liters. The deficit of 2 mEq. per liter, times 30 liters, equals 60 mEq. of potassium ion needed to overcome the deficit. If the daily excretion of potassium is another 60 mEq., then the patient should receive 120 mEq. of potassium in a 24-hour period. Potassium should be administered slowly in divided doses lest hyperpotassemia develop.

Adequate renal function is, of course, necessary. It must be kept in mind that the response to replacement of potassium ion is often slow; potassium administration may have no observable effect clinically or on the potassium content of the serum for 48 hours following therapy.

Potassium solutions used in prophylaxis and replacement are numerous. Where laboratory facilities are limited, the prepared solutions* such as one which Fox[13] described may be used to replace part of the fluid and electrolyte requirements.

The prepared solutions, however, often contain too much of an ion that may not be needed in the circumstances—sodium in the first few postoperative days, for example. The ideal replacement is by means of addition of the required ions. Potassium chloride solutions are available in which 1 gm. is equal to approximately 13.3 mEq. of potassium ion, when diluted to 1 liter. These solutions can be added to any other solution given by vein. Two gm. of potassium chloride added to each liter of fluid given will give enough of the potassium ion to replace that lost in the daily urinary excretion.

3400 Webster Street.

*Polysal® (Cutter) contains sodium 140 mEq., chloride 103 mEq., bicarbonate 55 mEq., potassium 10 mEq., calcium 5 mEq., and magnesium 3 mEq. per liter.

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Tuberculosis Control in California Mental Hospitals

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• *Diagnosis, the first step in tuberculosis control, is accomplished in the mental hospitals of California by x-ray examination of all patients annually and of new or returning patients on admission. This routine has been carried on since 1937.*

Tuberculous patients with active disease are segregated in one of three specially staffed and equipped units at the Patton, Sonoma and Napa hospitals. Those in whom disease is likely to recur are likewise segregated for special care and observation. Those in whom disease is inactive or not definitely diagnosed are not segregated but are observed by physicians of the Bureau of Tuberculosis Control of the California Department of Public Health in collaboration with the staffs of the institutions.

Since the establishment of this program the proportion of new or previously unrecognized cases of tuberculosis has been reduced from 0.83 per cent, a year after the program was begun, to 0.37 per cent, while recurrence or progression of previously recognized disease has been reduced from 12.3 per cent at the first survey to 5 per cent at the most recent.

Overcrowding in all hospitals has been the chief obstacle to the success of the program.

PROGRAMS for the control of tuberculosis in mental institutions are not new and many states now have them. One of the first such programs was begun in the province of Ontario in 1930 and has operated annually on a well organized basis since 1937.[5] The New York Department of Health, recently reviewing ten years of experience in such a program, reported a significant decrease in the number of cases in successive surveys.[1] While there were many factors contributing to the decrease, the major ones were early diagnosis and segregation of patients.

The relatively high incidence of tuberculosis among patients with mental disease has been commented upon many times. The New York report indicated that this is true before as well as after admission to hospital. In a high proportion of cases the mental disorder is such as to predispose to poor health habits. Overcrowding in mental institutions and lack of personnel aggravate this predisposition. In these institutions, however, because of the relatively static population and because the movement and environment of patients can be controlled, an effective program of tuberculosis control may be developed.

Such a control program has two aspects. The first is diagnosing tuberculosis in its earliest stages, which is done by an initial mass survey of all patients, roentgen examination of the chest of each patient upon admittance, and annual surveys to find newly developed cases. Once such a case-finding program is begun, segregation and isolation to prevent transmission of infection to others and a treatment program for patients with active disease must follow.

The tuberculosis case-finding program of the California Department of Mental Hygiene started with preliminary fluoroscopic and x-ray surveys in 1943,[2] and continuing annual x-ray surveys of all the patients in the hospitals was begun in 1946.[3, 4] The surveys are carried out by the Bureau of Tuberculosis Control in the California Department of Public Health, using mobile x-ray units. Employees are included in the surveys if they wish to be. At the time of the first survey (1946), the institutions began the routine x-ray examination of all patients admitted or returning from absence.

The policy of centralizing tuberculous patients in special units in selected hospitals was followed from the outset. As psychotherapy must be continued, the concentration of specially trained personnel and of facilities results in better treatment for patients; it also lessens the risk of infection to other patients and employees. The most obvious disadvantage of such a policy is that some patients are hospitalized many miles from their homes with consequent inconvenience for visiting relatives. It also imposes a considerable burden of moving tuberculous patients between institutions. Patton State Hospital was designated as the special tuberculosis center for Southern California and the Napa State Hospital for Northern California. Sonoma State Home was designated as the tuberculosis center for mentally deficient patients. As a part of this program a new tuberculosis unit was opened at Patton in October 1951 and another at Sonoma (February 1951). Shortly a new unit will be built at Napa. Until it is available the tuberculous patients for the northern institutions will continue to be cared for at both Napa and DeWitt state hospitals.

TABLE 1.—*Results of first five x-ray surveys in nine mental hospitals of California.*

Survey	1946-47	1947-48	1948-49	1949-50	1950-51
No. of patients whose previous survey or hospital film was negative (new cases)		124 (0.47%)	80 (0.30%)	43 (0.16%)	52 (0.18%)
No. of patients not previously x-rayed or disease not recognized previously		96 (0.36%)	53 (0.20%)	61 (0.22%)	54 (0.18%)
Total No. patients with x-ray evidence of new or previously unrecognized pulmonary tuberculosis	2139 (8.25%)	220 (0.83%)	133 (0.50%)	104 (0.38%)	106 (0.37%)

Percentages refer to total patient population, which varies at each survey.

The treatment available at these centers has improved greatly in the past few years. New therapeutic methods and particularly the use of antibiotics and other new drugs have been of invaluable assistance. A beginning has been made in supplying major thoracic operations. Professional and nursing staffs have been expanded as have laboratory, x-ray and surgical facilities. The effectiveness of the program is shown in the significant decrease in the proportion of previously unsuspected cases with successive surveys[4] (Table 1).

Some patients could not be sent to the special institutions, owing to lack of facilities. X-ray examination of them was carried out at each resurvey, and a study was made with particular reference to those in whom films showed new infiltration, cavitation or definite increase in the area or density of preexisting infiltration. The presence of any of these changes was interpreted as reactivation or progression of disease. It was found in the second survey (Table 2) that one in eight (12.3 per cent) of the non-segregated patients had x-ray evidence of such a progression of disease; 2.3 per cent among these had cavitation of lesions where there had been no evidence of it previously. There was a sharp reduction in the third survey in the number of cases with progression (8.6 per cent), and further reduction to 5.0 per cent in the sixth survey, which indicated improvement in the efficiency of segregation with each survey. These findings were based upon serial x-ray examination. Although an important part of the tuberculosis control program is the laboratory confirmation of activity of tuberculous lesions by means of sputum examination, unfortunately the mental institutions have had great difficulty in getting laboratory technicians. As a result, information regarding sputum findings is too sparse to be of statistical significance. This does not detract from the significance of the data, however, since serial x-rays, if the films are technically good and are compared carefully, reveal with considerable accuracy progressive or retrogressive changes in pulmonary lesions. Progression of lesions, as shown by serial x-ray films, is considered satisfactory evidence of activity of the disease process.

TABLE 2.—*Reactivation or progression of known tuberculosis among unsegregated mentally ill patients, as observed in x-ray surveys*

Survey	Total Number of Unsegregated Patients X-rayed	Number Showing Reactivation or Extension of Disease
1947-48	261	32 (12.3%)
1948-49	221	19 (8.6%)
1949-50	370	24 (6.9%)
1950-51	410	35 (8.5%)
1951-52	516	26 (5.0%)

Early in the control program it was necessary for each institution to improvise quarters for the large number of patients with tuberculosis found in the initial survey (Table 1), on admission, and in subsequent surveys. At first most of the patients were being cared for on ordinary wards with no specialized facilities and by personnel not trained in appropriate tuberculosis techniques. During the early part of the period of the case-finding program, very few of the nine institutions had tuberculosis specialists on their staffs, either as residents or as visiting consultants. At present each hospital has a competent consultant in tuberculosis and several now have full-time tuberculosis specialists on the staff.

In addition to the problems of care and segregation, the mental hospitals were seriously overcrowded during these years. In 1946 average overcrowding in all institutions was 25 per cent; overcrowding at Napa was 36 per cent, at Patton 23 per cent, and at Sonoma 39 per cent. In 1947, by the addition of new beds, the average overcrowding was reduced to 17 per cent for mentally ill patients and to 26 per cent for the mentally deficient patients at Sonoma. By 1948 overcrowding in the state's institutions for mentally ill patients had been reduced to 15 per cent, and that condition now obtains.

Because of overcrowding, segregation was not complete, particularly in relation to several classes of patients. Patients classified as having active or probably active tuberculosis were segregated first. Less attention was given to segregation of patients with questionable activity and less still if the disease was classified as probably inactive. As a result of the findings in subsequent surveys, it was felt that reactivation of the disease in non-segregated patients with supposedly inactive disease was a significant hazard, and the Bureau of Tuberculosis Control of

the California State Department of Public Health was asked to make a survey of all cases of tuberculosis among patients in the hospitals of the Department of Mental Hygiene.

The primary reason for the study was to devise a simple and fairly dependable method of dividing patients into categories of infectiousness, probable infectiousness, and probable non-infectiousness. This meant a review of all patients in whom tuberculosis had ever been diagnosed or suspected.

Almost 3,500 sets of x-ray films of the chest in chronological order were reviewed by the medical staff of the Bureau of Tuberculosis Control in collaboration with the staff physicians of the hospitals, and with the patients' charts at hand, so that all available information could be connected. Each of the tuberculosis specialists had had long experience in institutional treatment of tuberculosis and in the interpretation of films of the chest.

In addition to the classifications and policies established through the survey, certain other notable benefits were derived:

The careful review of every case proved to be invaluable to the three consultants as well as to the resident staffs. To the consultants it gave a detailed quantitative and qualitative picture of the tuberculosis care problem in each institution which could have been obtained in no other way. To the resident staff, the critical review gave aid in making decisions on borderline cases, suggested additional diagnostic procedures, promoted the use of the standard National Tuberculosis Association diagnostic classification, and brought more patients to therapy with drugs and operation.

The review also permitted the dropping from the records of a large number of diagnosed or suspected cases which had been carried needlessly. To the harassed administrators of the dangerously overcrowded institutions, who feared intramural spread of tuberculosis, it brought help in that the patients with really dangerous tuberculosis were identified and isolated and those with reasonably safe arrested cases could be placed in non-segregated quarters.

After a pilot study at the Sonoma State Home, five categories of cases were established, and this division has been applied in the other institutions as well. The categories and the policies with regard to them are as follows:

A. *Patients in whom active disease is either demonstrated or strongly indicated.* These patients are segregated in the units already established.

B. *Patients in whom the disease is relatively inactive but is most likely to become active.* This category includes patients in whom lesions were active in the fairly recent past, or were very extensive at any time, and also recently admitted patients in whom a single film indicates tuberculosis that may become active.

As reactivation of pulmonary tuberculosis occurs almost exclusively among such persons, it was decided that patients in this category also should be sent to the hospitals with tuberculosis units, so that they could be under the care of specially trained personnel. At the present writing this has been done with all but a few in this category who are still segregated in the other hospitals. These patients, while not under active treatment, receive special care and diet and are roentgenographically examined every three months.

The segregation of these patients increased the total of segregated patients by 832. A few beds were already available in the special units for patients with active disease, but for most of the number it was necessary to set up additional wards in the three tuberculosis centers.

C. *Patients in whom recurrence of tuberculosis is less likely.* These include patients who have relatively insignificant fibrotic or fibrocalcific lesions, most of which are very small in extent, with no evidence of activity for several years. A sharply circumscribed "tuberculoma" of less than 1 cm. diameter may be considered a lesion of this category. Since the probability of reactivation of disease among such patients is much less likely, they are not segregated but have x-ray examination of the chest every six months.

TABLE 3.—*Classification of tuberculosis patients with known or suspected tuberculosis—Totals to August, 1952*

	Classification*					
	A	B	C	D	E	Total
Mentally ill	841	777	1,024	87	351	3,080
Male	572	446	638	54	220	1,930
Female	269	331	386	33	131	1,150
Mentally defective	82	55	136	23	67	363
Male	41	29	78	11	34	193
Female	41	26	58	12	33	170
Segregation indicated:						
Mentally ill	841	777				1,618
Mentally defective	82	55				137
Total	923	832				1,755
X-ray and laboratory follow-up but no segregation:						
Mentally ill			1,024			1,024
Mentally defective			136			136
Total			1,160			1,160
Removed from tuberculosis register:						
Mentally ill				87	351	438
Mentally defective				23	67	90
Total				110	418	528

**A*—Probably active disease; *B*—Recurrence strong possibility; *C*—Recurrence less likely; *D*—Primary lesions only; *E*—Non-tuberculous disease.

D. *Patients with simple calcified primary lesions.* This category represents the former routine of including every case of pulmonary calcification of the Ghon type on the tuberculosis register. As such entries are no longer made, the category will disappear. No action is taken in these cases.

E. *Patients with miscellaneous non-tuberculous conditions:*

1. Those in whom pulmonary tuberculosis has been tentatively diagnosed or in whom infiltration of the lung fields has been observed, but in whom at least one thoracic film shows clear lung fields.

2. Those with infiltration of the lung which by location or progress seems symptomatic of other condition, particularly suppuration of the lung.

3. Those with other kinds of infiltration of the lung or other abnormalities which do not seem due to tuberculosis and cannot be diagnosed without further studies.

4. Those in whom thickening or calcification of the pleura of undetermined origin is observed but no parenchymal lesions are demonstrated.

Improvement of diagnostic methods should result in reduction of the number of cases in Category E. Patients so classified are not segregated.

The results of the survey and the policies here outlined were explained to the staffs of the mental hospitals at two regional meetings. The chief benefits resulting from those meetings are (1) improvement of isolation techniques for patients with active disease; (2) encouragement of a more active treatment program; (3) development of a program for the care and segregation of patients in whom disease may recur; (4) better understanding and compliance with recommendations for segregation of particular patients. Although this phase of the program has been in effect only a short time, the value of it is felt to be considerable.

Two other advantages of the control program should be noted. One is the simplification of staffing and budgeting. It is simpler, for example, to explain the drug requirements for a tuberculosis unit of 500 patients than to explain the same requirements as components of the drug budgets of five or six hospitals.

A final advantage is the fact that employees of the institutions are appreciative of the value of the program. If there is delay in transferring a patient to a tuberculosis unit after active disease has been diagnosed, employees become uneasy and call the matter to the attention of the hospital administration.

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Cortisone and Corticotropin (ACTH)—A Review

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FOUR YEARS AGO, Hench, Kendall, Slocumb and Polley[51] reported that cortisone and corticotropin (ACTH) effect pronounced and prompt improvement in the signs and symptoms of rheumatoid arthritis. The introduction of two potent agents effective against a disease for which therapeutic agents were sorely lacking was promptly hailed as a major contribution to medicine, but of perhaps greater importance was the demonstration by the investigators that cortisone and corticotropin have a physiologic property, theretofore not generally recognized—the ability to suppress or inhibit inflammatory reaction of mesenchymal tissue, occurring in a variety of diseases. The implications of this discovery have been far-reaching, extending into every field of medicine and surgery. The employment of these hormones in over one hundred disease states has been reported. In some, there apparently has been a rational basis for their use suggested by one or more of their physiologic actions. In others, trial has been purely empiric, justified perhaps by the assumption that these substances may have other physiologic effects as yet undiscovered. An enormous volume of medical literature has appeared incident to these investigations. One published bibliography lists over 3,000 articles which have appeared in less than three years and the list is still growing.[22] The purpose of this review is to select from this enormous literature only a few data on the physiologic and pharmacologic actions of these hormones which appear to be of particular significance to clinicians. For a more comprehensive summary of all adrenocortical steroids and corticotropin the recent series of articles by Thorn and his colleagues is highly recommended.[113]

NATURE OF CORTISONE AND CORTICOTROPIN

Cortisone is a steroid and, like cholesterol, sex hormones and bile acids, contains a phenanthrene nucleus (Figure 1). It was isolated from the adrenal cortex in 1935, and a definite chemical formula assigned to it in 1938 by Kendall and his co-workers.[72] According to Polley and Mason, the significant features of this compound upon which its antirheumatic (and probably anti-inflammatory) properties are dependent are the presence of a ketone group at C-3, a double bond between C-4 and C-5, either a ketone or hydroxyl group at C-11, a ketone group

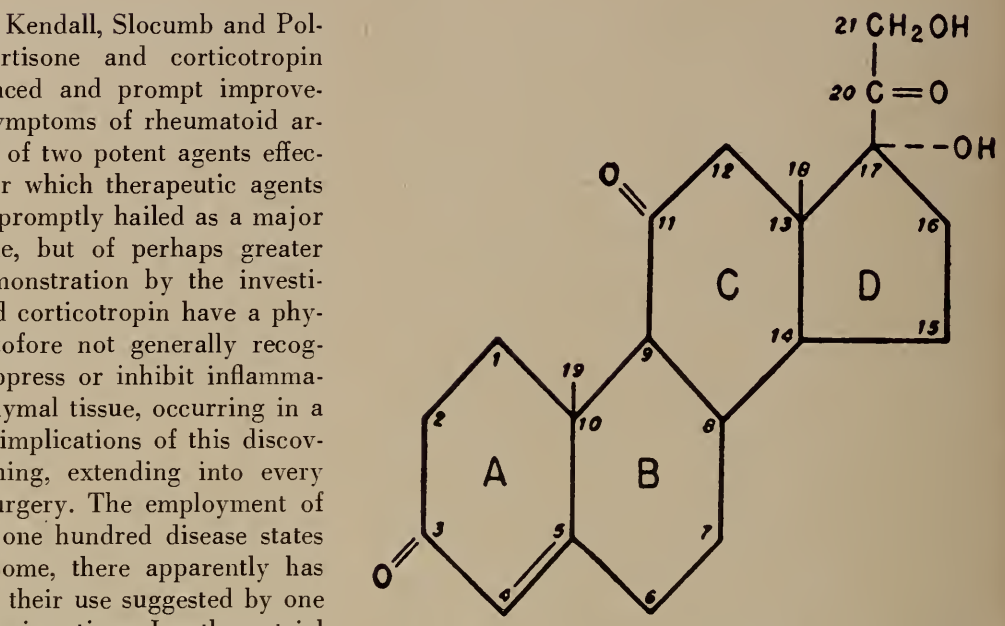


Figure 1.—Chemical formula of cortisone (11-dehydro-17-hydroxycorticosterone or Compound E of Kendall).

at C-20, and hydroxyl groups at C-17 and C-21. The only other steroid that fulfills these criteria is 17-hydroxycorticosterone, or Compound F of Kendall; and it is the only steroid of the many which have been investigated which appears to have significant antirheumatic effect.[90]

Corticotropin is a protein with a molecular weight of approximately 20,000. The hormone has not been isolated in pure form and its chemical formula is not known. Its biologic activity is destroyed by several enzymes, which suggests that one or more peptide bonds are present. It may contain such amino acids as tyrosine, tryptophane and arginine.[6] The studies of Li and Lesh suggested that corticotropic activity may reside in several peptide fractions.[66, 69]

PREPARATIONS

Cortisone is commercially prepared as an acetate ester. The biologic activity of cortisone and cortisone acetate is essentially the same. It is available in 5 mg., 10 mg. and 25 mg. tablets for oral administration, and in a liquid preparation for intramuscular or subcutaneous injection, containing 25 mg. of cortisone in each cubic centimeter. It is also available in a 1.5 per cent ointment and in 0.5 per cent and 2.5 per cent suspensions for ophthalmic use.

Corticotropin is available either as a lyophilized powder in vials containing 10, 25 or 40 provisional U.S.P. units or as a stable solution containing 40 U.S.P. units in each cubic centimeter. A long-acting preparation of lyophilized corticotropin in gelatin is available in 5 cc. vials containing 20 or 40 U.S.P. units in each cubic centimeter. In the past year, a new preparation known as purified corticotropin has become available and will in all probability replace the older long-acting preparation.[80] When administered subcutaneously or intramuscularly, purified corticotropin has a greater clinical effect, unit for unit, than has corticotropin. For convenience, however, the potency of this new preparation is expressed in terms of *clinical activity*, equivalent to a specified number of U.S.P. units of corticotropin, so that a change from corticotropin to purified corticotropin can be made without gross alterations of dose. It is available in 5 cc. vials containing 20 or 40 U.S.P. units in each cubic centimeter.

METHODS OF PREPARATION

The amount of cortisone available by extraction from adrenal glands is exceedingly small. Shortly after the hormone was isolated and its chemical formula ascertained, research began in several laboratories in an effort to produce this hormone synthetically. This was finally accomplished in 1946 by Sarett of Merck Laboratories, using desoxycholic acid derived from beef bile as a starting material.[98] Its preparation is the most complicated procedure in the pharmaceutical laboratory today. Nevertheless, in the past year production has been catching up with the tremendous demand for the hormone. This increased production and presumably competition among various manufacturers has made possible a price reduction to 5 per cent of the cost in 1949.

Corticotropin may be extracted by several methods from hog, sheep and beef pituitary.[5, 70, 99] Astwood and colleagues recently reviewed methods of extraction and purification.[6] Since the chemical formula of corticotropin is unknown, it would seem unlikely that it will ever be produced synthetically. However, there is a possibility that a peptide fraction which appears to have physiologic properties similar to the protein form may some day be synthesized.[63] Early corticotropin preparations were occasionally contaminated by minute quantities of other pituitary substances, particularly posterior pituitary fractions, but with recent advances in purification, contamination has been almost completely eliminated.[40] To humans, corticotropin derived from animal sources is a foreign protein, and sensitivity reactions, although uncommon, have been observed. Pyrogenic reactions, urticaria and contact dermatitis have been reported.[14, 52, 71, 125]

METHOD OF ASSAY

Corticotropin is assayed by an adrenal ascorbic acid depletion test devised by Sayers, Sayers and Woodbury, in comparison with a provisional U.S.P. standard.[1, 100] There is likely to be considerable variation in different batches of any substance which must be assayed by biologic methods. According to Mote, a statistical variation of less than 20 per cent in the Sayers and Sayers bioassay technique is considered good; variations of a greater magnitude are not uncommon.[77] Furthermore, all brands of corticotropin are not made by the same process and there are differences in stability, solubility and absorption rates.[1] These factors may occasionally be of clinical importance. Some patients who seem to be maintained satisfactorily on a certain dose of one kind of corticotropin have a different response if a similar amount of another preparation is given. Because of this variability in potency, it has been suggested that human assay may be superior to animal assay.[82, 91]

Cortisone, a pure crystalline substance of known chemical structure, is of course assayed by weight. During initial investigational studies, some variation was noted in the potency of various batches of cortisone. This was believed due to "unstable suspensions."[52] This difficulty was quickly overcome. The reviewer is not aware of any reports in the past two years of variability in the potency of different preparations of cortisone.

MODE OF ACTION OF CORTICOTROPIN

Corticotropin acts by stimulating the adrenal gland to increase the synthesis and discharge of adrenal steroids. Recent evidence indicates that Compound F of Kendall, or hydrocortisone, is the principal hormone that is elaborated by the stimulus of corticotropin, along with smaller amounts of corticosterone and cortisone.[20, 73, 79, 87] Cholesterol, present in high concentration in the adrenal cortex, is probably the precursor of these steroids. It might be supposed that corticotropin, by stimulating the secretion of several adrenal steroids, may produce clinical effects other than those derived from cortisone. There is little evidence to date, however, to support this supposition.[52]

A given quantity of corticotropin may elicit a variable response in adrenal steroidal output. An inactive gland, for instance, in a person with long-standing hypopituitarism may show a subnormal response to the same dose of the hormone which may produce a large output of adrenal steroids from a normally active gland.[64, 102] It is also possible that a gland which may be already greatly stimulated by endogenous corticotropin as a result, for instance, of stress, may respond subnormally to an administered dose of the hormone. However, the observa-

tions of Roche and his colleagues are not in accord with this.[95] They performed Thorn tests on patients in the postoperative period. In this group, the eosinophils were already depressed because of the stress induced by operation, yet when corticotropin was given a further depression of the eosinophils occurred. These findings would seem to indicate that the normal adrenal gland has a considerable reserve secretory power.

RESISTANCE TO CORTICOTROPIN

Resistance to corticotropin may develop, particularly in the course of long-term therapy. This may be manifest by a worsening of the symptoms and signs of the disease under treatment, and by a diminished eosinophil response to the Thorn test.[2] Holbrook and his associates noted that the dose of corticotropin required to control the symptoms and signs of rheumatoid arthritis progressively increased in 12 of 35 cases.[55] They observed three types of resistance: (1) Primary—in which there was no clinical response even the first time corticotropin was given. (2) Acquired species specific—in which after a satisfactory initial response, increasing doses of pig corticotropin were required to maintain a satisfactory response; on changing to beef corticotropin, a dramatic clinical response occurred with the same or smaller doses. (3) Acquired, apparent nonspecific—in which patients who required increasing amounts of pig corticotropin needed the same or larger doses of beef corticotropin. The cause of the development of this resistance is not known. Forsham and co-workers expressed belief it is due to tissue inactivation rather than to antihormone development.[39] It is noteworthy, however, that the resistance which develops following administration of other pituitary hormones, such as the thyrotropic, gonadotropic and diabetogenic hormones, is generally considered to be due to the development of a specific antihormone. A patient who becomes resistant to corticotropin administered intramuscularly usually is responsive to the hormone when it is administered intravenously. Thorn and his colleagues reported they had not encountered the development of resistance to purified corticotropin.[113]

METHODS OF ADMINISTRATION

Cortisone may be given orally, subcutaneously or intramuscularly. The onset of effect of cortisone given by mouth is usually more rapid and the duration of action shorter than when it is administered intramuscularly. The effect when it is given by mouth usually lasts six to eight hours; when given intramuscularly, from 24 to 48 hours.[13, 115] It is advisable, therefore, when the hormone is administered by mouth, to give it in divided doses. The effective oral dose in 100 cases of rheumatoid arthritis studied by Ward and colleagues was equal to the intramuscular dose in about one-half the cases; in the other half about a sixth to a quarter more of the preparation was required when it was given orally.[115] Cortisone is rarely ineffective orally.

The method of administration as well as the dose of corticotropin greatly influences the adrenal response. The hormone is ineffective if given orally, as it is inactivated by gastrointestinal enzymes. A single dose of corticotropin given intramuscularly will produce a measurable adrenal response within thirty minutes. This will be maximal in four hours and will disappear in approximately twelve hours.[40] For continuous therapeutic control throughout the 24-hour period, it has been necessary to give corticotropin in divided doses every six to eight hours.

To obviate the necessity of multiple daily injections, long-acting preparations for intramuscular use exclusively have been made by the addition of substances which delay absorption of corticotropin from the site of injection.[122, 123] Gelatin is the menstruum currently used in commercial preparations. Some investigators are skeptical as to whether the long-acting preparations, given once or twice daily, are as therapeutically effective as the aqueous preparations given at four- to six-hour intervals.[56] Thorn and associates, however, expressed the opinion that purified corticotropin in gelatin, which has a sustained effect on the adrenal cortex for longer than 24 hours, is a very effective therapeutic agent.

Gordon[47] observed that 50 mg. of corticotropin given by constant intravenous drip results in a much greater adrenal stimulation than does 100 mg. of the same preparation given intramuscularly in 25 mg. doses at six-hour intervals. In fact, as little as 10 mg. of corticotropin given intravenously daily for ten days has produced many of the signs and symptoms of Cushing's disease.[77] The observations of Renold and his colleagues indicate the importance of the time factor in intravenous administration.[92] Twenty milligrams of corticotropin given in one minute produces no significant adrenocortical activity; the same dose given over a period of two days will triple the daily excretion of 17-ketosteroid. Twenty milligrams seems to be a critical dose. Increasing the amount administered intravenously in an eight-hour period above this figure does not significantly increase the adrenocortical response.

CUSHING'S SYNDROME

Before corticotropin and cortisone were available in substantial quantities for clinical investigation, some knowledge as to their physiologic effects was accurately predicted by studies of the various manifestations of Cushing's syndrome.[107] The features of this syndrome are a characteristic adiposity, diminished carbohydrate tolerance, hypertension, nega-

tive nitrogen balance, lymphopenia and eosinopenia, osteoporosis, acne, cutaneous striae and hirsutism. There is an increased urinary excretion of adrenal hormones. Susceptibility to infection and poor wound healing also occur. Mental disturbances are not uncommon. Most if not all of these features have been produced with large doses of cortisone and corticotropin given over prolonged periods of time. It is important to emphasize, however, that the changes induced by the hormones are nearly always reversible and disappear with cessation of treatment or reduction of the dose.

EFFECTS ON WATER AND ELECTROLYTE METABOLISM

Cortisone and corticotropin may have varying effects on water metabolism. There may be either retention or diuresis during hormone administration, depending upon the preexisting physiologic state. Such alterations are usually a consequence of changing plasma electrolyte levels. At times, however, a dissociation may occur between urinary excretion of water and of electrolytes.[113] Soon after hormone administration is begun there is a transient shift of water, sodium and chloride into the extracellular spaces. This reaches a peak within 8 or 9 days and then subsides as treatment continues. Cortisone in daily doses of 100 mg. will cause little if any change in the balance of calcium, phosphorus, sodium, potassium and chloride, and in the concentration of these ions in the blood.[107] Corticotropin in 100 mg. daily doses intramuscularly and cortisone in 200 mg. daily doses will regularly induce a negative balance of potassium. The effects on excretion of sodium and chloride are somewhat variable. Usually there is early retention of the ions, followed later by increased excretion.

EFFECTS ON CARBOHYDRATE METABOLISM

In the doses usually employed, cortisone and corticotropin ordinarily do not produce alterations in carbohydrate tolerance. Sprague and associates noted no significant changes in the fasting blood sugar levels in 16 patients with rheumatoid arthritis under treatment with cortisone.[107] In 14 of these patients, glucose tolerance tests were performed. In 10, the results were normal; in 4, abnormal curves were observed. Two of the patients with abnormal glucose tolerance were tested after cessation of treatment and had normal tolerance curves. The occasional occurrence of diabetes mellitus has been reported in patients whose carbohydrate tolerance both before and after treatment was normal.[19] The insulin requirement of diabetic patients has been observed to increase during the administration of these hormones.[12]

EFFECTS ON FAT METABOLISM

The most evident effect of these hormones on fat metabolism is an alteration in fat deposition, with the appearance of moon-shaped facies and fatty deposits in the cervicodorsal and supraclavicular areas.[109] Hypercholesterolemia has been observed during prolonged treatment with corticotropin and cortisone.[3, 93]

EFFECTS ON NITROGEN METABOLISM

Although cortisone has been shown experimentally to inhibit protein synthesis and to increase protein catabolism, the effects of therapeutic doses of cortisone on nitrogen metabolism in man have not been striking. One hundred milligrams a day causes little or no augmentation in nitrogen excretion, but 200 mg. a day of cortisone and 100 mg. a day of corticotropin intramuscularly cause a negative nitrogen balance.[107] A significant increase in urinary excretion of uric acid and a decrease in uric acid content of serum have been observed with the administration of cortisone in 100 and 200 mg. doses and with 100 mg. doses of corticotropin. This is particularly evident when the content of uric acid in the serum before the hormones are given is in the upper part of the normal range or elevated.[107]

CARDIOVASCULAR EFFECTS

Blood Pressure: There has gradually accumulated a large amount of evidence linking the adrenal cortex with hypertension.[83] Hypertension is a common occurrence in Cushing's disease; contrariwise, hypotension is frequent in Addison's disease. There has been some variance of opinion as to the effects of corticotropin and cortisone in humans. In normotensive patients with normal renal function, Perera found no significant variation in blood pressure occurring during cortisone administration.[85, 86] Dustan and colleagues confirmed this with regard to cortisone.[31] Corticotropin, however, in 60 to 200 mg. daily doses intramuscularly, increased the blood pressure of both normotensive and hypertensive persons. Hein and Whipple noted that "about half" of a group of 22 patients receiving rather large doses of corticotropin and cortisone had elevation of systolic pressure of 30 mm. of mercury or more, and of diastolic pressure of 10 mm. or more.[50] In hypertensive patients, especially those with impaired renal function, a further increase in blood pressure seems to be a common although not invariable occurrence during hormone administration.[103] On the other hand, the administration of cortisone to children with the adrenogenital syndrome may result in a very significant reduction in blood pressure.[121]

Capillary Permeability: Increased capillary resistance as measured by a negative pressure method has

been noted after various types of stress. Robson and Duthie measured capillary resistance in patients under treatment with corticotropin and cortisone. In most, there was an increase in capillary resistance.[94] In two cases of idiopathic thrombocytopenic purpura, Robson and Duthie noted an increase in capillary resistance although there was no change in the number of platelets. However, Bethell and colleagues,[10] and Jacobsen and Sohier[59] observed increases in the number of platelets in the blood of patients with thrombocytopenic purpura who were receiving either substance. On the other hand, easy bruising, presumably related to increased capillary fragility, has been noted during prolonged hormone therapy.

Thromboembolic Complications: Cosgriff and associates[23] observed a considerable shortening of the coagulation time of venous blood in patients under treatment with these substances. The mechanism of this alteration is not clear but it seems to be of some clinical importance. The incidence of thromboembolic complications, particularly thrombophlebitis and pulmonary embolism, in patients under treatment with these hormones or during the first three or four weeks following treatment, seems to be higher than it might logically be expected to be from the underlying disease process alone.[24] Fahey, however, could not confirm Cosgriff's observations; he noted no significant alteration of the coagulation time after the administration of either hormone.[35]

RESPIRATORY EFFECTS

Cortisone and corticotropin increase the vital capacity and maximal breathing capacity in several chronic pulmonary diseases, including bronchial asthma, emphysema, beryllium granulomatosis, silicosis and sarcoidosis. Investigation of these effects has been limited and the results have not been completely consistent.[44, 61, 117]

GASTROINTESTINAL EFFECTS

Gastric Secretion: Gray and associates[48] studied the effect of corticotropin on gastrointestinal enzymes and of cortisone and corticotropin on gastric secretion. They demonstrated that these substances cause an increase of about 200 per cent in basal and nocturnal secretion of acid and pepsin. In every instance, corticotropin increased the acid secretion to an amount usually associated with active duodenal ulcer. Similar gastric response may be brought about by cortisone. One patient under their observation who had been given cortisone had two perforated duodenal ulcers, a second a massive fatal gastrointestinal hemorrhage, and a third a massive gastrointestinal hemorrhage and duodenal perforation. The occurrence of such untoward complications has been confirmed by many investigators.

HEMOPOIETIC EFFECTS

Both cortisone and corticotropin may cause neutrophilic leukocytosis for short periods, and both bring about eosinopenia and lymphopenia.[114] With corticotropin, eosinopenia may continue as long as the hormone is given and for some weeks thereafter, or there may be a return to near normal levels even while corticotropin therapy continues. During prolonged administration of cortisone, a significant increase in circulating neurophils has been observed, but no significant decrease in lymphocytes and eosinophils occurs.[107] The prompt eosinopenic response to corticotropin has been utilized by Thorn as a test for adrenocortical function. Although it may be inaccurate in certain circumstances, it remains the simplest method of estimating adrenocortical function.[112] Reticulocytosis and increase in the number of erythrocytes may follow hormone therapy of several diseases in which anemia is present.[36]

EFFECTS ON ENDOCRINE GLANDS

Pituitary: Corticotropin and cortisone both inhibit anterior pituitary function. Cytologic changes, similar to those that occur in spontaneous Cushing's disease, have been noted in the pituitary gland in patients to whom the hormones were given.[65] It is believed by some investigators that these alterations are retrogressive in nature and are secondary to increased circulating adrenal hormones. Recently, Sayers and co-workers demonstrated diminished content of corticotropin in the blood of patients with adrenogenital syndrome who received cortisone.[113] Ingle,[58] in 1938, demonstrated that adrenal atrophy which developed in rats following cortin administration is a consequence of depression of adrenotropic function of the anterior pituitary. Evidence of pituitary depression may, therefore, be indirectly derived through determination of adrenocortical function, which can be more easily estimated than can pituitary function.

Adrenal: Corticotropin causes an increase in the size of the adrenal cortex. Histologically, a loss of fat and hypertrophy of the zona reticularis and the zona fasciculata occur. Cortisone causes a definite decrease in the size of the adrenal cortex. Pronounced atrophy of the zona reticularis and of the zona fasciculata has been observed.[81] Alterations in secretory activity parallel these anatomic changes. Corticotropin brings about prompt increase in the urinary excretion of both 17-ketosteroids and corticosteroids. Cortisone usually causes a decrease in the urinary secretion of 17-ketosteroids initially, followed by a gradual leveling off with continued treat-

ment. Corticosteroid excretion usually increases when cortisone is administered; with prolonged treatment, this usually levels off, but remains above the pretreatment levels.[107, 114]

Adrenal Insufficiency on Hormone Withdrawal: Following withdrawal of either of these substances, there may be a period of adrenocortical insufficiency of variable degree, which may last for a few days to as long as three months. This is usually more pronounced after cortisone treatment, but also occurs following corticotropin administration. It may be manifested clinically by asthenia, somnolence, anorexia or depression. The urinary excretion of adrenocortical hormones decreases sharply and there is a diminished response to the Thorn test.[108] Eliel and associates,[33] in studies of water and electrolyte changes following discontinuation of these hormones, observed substantial losses of sodium and chloride after both, indicative of adrenocortical suppression. For instance, one patient after receiving 100 mg. of corticotropin per day for 30 days, lost two and one-half times as much sodium and five times as much chloride as was retained during the period of hormone administration. This temporary period of adrenal suppression, although at times distressing to the patient, may be of little serious consequence. However, if during this period the patient should be subjected to the stress of a serious injury, operation or illness, the adrenal response might prove inadequate. Fatalities have occurred in cases in which cortisone was discontinued immediately before a surgical operation.[42] To avoid iatrogenic adrenal insufficiency, administration of cortisone should never be halted abruptly, but decreased gradually over a period of several weeks.

Thyroid: Depression of thyroid function has been observed in patients under treatment with both corticotropin and cortisone. There is a reduction in the uptake of radioactive iodine (I^{131}) by the thyroid gland and by a low serum protein-bound iodine. The basal metabolic rate is reduced to minus 15 per cent or lower in only one-third of the cases. The reason for this is that corticotropin and cortisone are both calorigenic; both increase basal oxygen consumption in man by a direct action which does not involve alterations in thyroid function. Thyroid depression during hormone treatment may, therefore, be more pronounced than the basal metabolic rate indicates.[53, 124]

ANDROGENIC EFFECTS

Hirsutism in female patients is a common complication of long-term cortisone and corticotropin therapy.[52, 97] Acne occasionally occurs, particularly in younger patients. It is believed that these changes are related to the androgenic activity of the adrenal hormones. Fortunately, other evidences of masculinization do not occur. The hirsutism is usually mild, consisting of a light growth of hair on the upper lip and chin and along the cheeks. Nevertheless, to some patients this has been the most objectionable complication of therapy with these hormones.

NEUROLOGIC AND PSYCHIATRIC EFFECTS

Convulsive Seizures: The electroencephalograms of patients with epilepsy may become more abnormal during cortisone therapy.[46] Also, abnormal changes have been noted in encephalograms of patients who previously had normal tracings, indicating that both corticotropin and cortisone influence electrical activity of the brain.[54] Further evidence of increased cerebral excitation is suggested by reports of convulsions in patients without a previous history of seizures.[30]

Psychiatric Disturbances: Mental disturbances are frequent complications of treatment with either hormone. Most common are mild deviations of mood, particularly euphoria, generally regarded by both patient and and physician as a beneficial effect. However, psychoneurotic responses and frank and alarming psychoses may also occur. Rome and Braceland[96] expressed belief that psychotic reactions will develop in patients who have made only marginal psychological adjustment in the past.[96] This has not, however, been the experience of Clark, Bauer and Cobb.[16] In reviewing their observations of major mental disturbances during cortisone and corticotropin therapy, they noted that none of their patients who became mentally or emotionally disturbed while on treatment had a history of major mental disease. Furthermore, systematic clinical study revealed no clue to enable them to anticipate the occurrence of psychiatric complications. They stressed the importance of close observation for the early detection of these mental disturbances. Some of the premonitory signs which have been noted include paresthesias in the frontal region of the forehead (usually described as a sense of heaviness, fullness or fuzziness), insomnia, restlessness and agitation in some, lethargy and apathy in others. Delusional ideas and frank psychotic behavior may be the initial symptoms. It may be noted that all ten of the patients reported upon by Clark, Bauer and Cobb were receiving moderately large doses of corticotropin. As yet, no correlation has been established between any metabolic change induced by these hormones and development of mental disturbances.

OSTEOPOROSIS

Osteoporosis is a common manifestation in Cushing's disease. As might be expected, it has also developed in the hyperadrenal state induced by corti-

cotropin and cortisone. It is difficult, nevertheless, to determine the actual potency of these hormones as osteoporosis-producing agents. First of all, comparisons of roentgenograms taken at various intervals in treatment are unsatisfactory due to variations in radiographic technique; secondly, many of the patients who have received these hormones had a considerable degree of osteoporosis before treatment was begun. For instance, in the five female patients treated for long periods with cortisone by DiMartini and associates,[28] who developed pathologic fractures, one or more factors commonly predisposing to osteoporosis were present. These were prolonged bed-rest, an active disease process and the postmenopausal state. That cortisone does not always have a deleterious effect on bone metabolism is suggested by the following case report of Thorn and co-workers: A 51-year-old woman with non-tropical sprue of 13 years' duration and severe, generalized osteomalacia, had bilateral, impacted, subcapital fractures of the femoral neck as the result of a fall. Despite the presence of severe bone disease, cortisone in 100 mg. daily doses was continued for a month and then at 50 mg. daily thereafter. There was considerable improvement in the patient's health and weight. Although there had been complete absence of healing during a period of five weeks prior to cortisone therapy, both fractures healed satisfactorily, and three months after bilateral hip nailing, no distinct fracture line was evident.[113]

EFFECTS ON WOUND HEALING

Ragan and associates were the first to point out that corticotropin and cortisone may retard wound healing, both in humans and experimental animals.[90] Similar findings were noted by Alrich and associates[4] in rats, and by Spain and co-workers[104] in mice that were pretreated with corticotropin and cortisone. The doses used by these investigators were proportionally much larger than those commonly employed clinically. Cole and associates[17] noted no retardation of wound healing in dogs given these hormones in proportionally smaller doses. Poor wound healing, as has been mentioned before, is a fairly common occurrence in Cushing's disease, and there have been several references in the literature to this occurrence in patients receiving corticotropin and cortisone. In some cases it was not clear whether it was owing to the therapy or to underlying disease. Rosenberg and associates,[97] for instance, mentioned 20 patients who had skin and muscle biopsies just before corticotropin treatment. In 16, the wound healed promptly; in 4, there was a delay in wound healing, but 3 of the 4 had a generalized inflammatory disease of the skin. Other observers[49, 52] have noted no delay in wound healing. Ford and Key, for example, observed no interference with wound healing following orthopedic operations in 20 patients who were receiving cortisone, generally in smaller than ordinary doses and for relatively short periods.[41] The experimental studies of Findlay and Howes may help to explain these divergent reports.[37] They studied the combined effect of cortisone and partial protein depletion in wound healing in rabbits. When 1.5 mg. of cortisone per kilogram of body weight was given to rabbits on a normal diet, only a slight delay in wound healing was noted. A similar retardation was noted in animals depleted of protein but not receiving cortisone. However, the administration of cortisone to protein-depleted rabbits caused serious delay in wound healing. Many of the cortisone-treated patients in whom this complication developed had chronic febrile diseases. Protein depletion undoubtedly occurs in such cases and may well have been a factor in prolonged wound healing.

EFFECTS ON BACTERIAL INFECTIONS

Cortisone and corticotropin may bring about defervescence and apparent clinical improvement in patients with bacterial infections even though bacteremia may still be present. Considerable experimental evidence indicates the hormones cause lessening of resistance to bacterial infections. Experimental infection of cortisone-treated rabbits with streptococci and of cortisone-treated rats with tubercle bacilli caused the death of the animals, whereas in untreated animals that were given the same doses of the organisms there were no demonstrable systemic effects.[75, 76] The Committee of Medical Research of the American Trudeau Society has recommended that these drugs not be used in patients with active tuberculosis, and used only with extreme caution in patients with possible latent tuberculosis.[7] It is the committee's recommendation that diagnostic examinations for tuberculosis be carried out on all patients in whom the use of these hormones is contemplated. Not only have cortisone and corticotropin been inculpated in the reactivation of old and apparently arrested tuberculosis, but several fulminating and fatal cases have been reported in which the x-ray films of the chest before treatment were considered normal.[43, 62] Recently, the Committee on Therapy of the American Trudeau Society reviewed the cases of 81 patients with tuberculosis who had received either cortisone or corticotropin or both. In 40 cases the course of the disease was unfavorable, in 10 favorable, and in 25 apparently not changed. The committee surmised that "a large number of cases with unsuspected tuberculous disease must have received these hormones without harmful

effect," and it concluded that reactivation of tuberculous infection does not invariably result from treatment with cortisone or corticotropin.[18]

ANTIPHLOGISTIC EFFECTS

That cortisone and corticotropin suppress inflammation has been amply documented by observations in a wide variety of diseases, particularly in the fields of arthritis, dermatology, ophthalmology, allergy and cardiology. Careful histologic studies indicated that all elements of inflammatory response to a variety of etiologic agents may be suppressed by these hormones; that vascular tone is better maintained and there is less endothelial damage; that diapedesis of leukocytes is consequently lessened and there is a reduction of exudate; and that margination or "walling-off" of the area of injury by cellular elements is diminished.[32, 74, 105]

Because of the evidence linking the adrenal cortex with inflammation, it is suggested that the hormone may suppress inflammation by interfering in some manner with antigen-antibody reaction.[118, 119] This problem has been investigated at great length, but the results have not been altogether consistent. It is generally agreed, however, that corticotropin and cortisone do not interfere with antigen-antibody union, although they may inhibit the development of antibodies. Fischel[38] and Daugherty[26, 27] expressed doubt that inhibition of antibody formation is an adequate explanation for the anti-inflammatory properties of the hormones, for the amount of corticotropin required for complete suppression of circulating antibodies is far greater than that required to diminish allergic inflammation. Daugherty[27] concluded that cortisone diminishes inflammatory response to traumatic, bacterial and chemical as well as to allergic stimuli, not through some mechanism related to antigen-antibody union, but rather by a "specific antiphlogogenic action of its own." Although this cannot be accepted as a final answer, it seems to be a reasonable working hypothesis until knowledge of the manifold actions of these hormones is more complete. Precise information is still lacking, but the locus of the inflammatory action of the hormones is probably the tissue cell. Corticotropin and cortisone do not destroy or inhibit etiologic agents, but they so alter cellular physiology that the tissues are unable to sustain an inflammatory response. It is important to note that these hormones suppress both "useful and useless" inflammation with impartiality. The suppression of inflammatory response to bacterial infection is, of course, undesirable; the inhibition of the apparently useless inflammatory response of rheumatoid arthritis or a non-specific iritis is very desirable.

INCIDENCE AND IMPORTANCE OF UNDESIRABLE EFFECTS

How often do undesirable physiological effects occur? The overall incidence in several large series, including many cases in which treatment was continued over a long term, has been between 40 per cent and 66 per cent.[11,97,110,111] It is important to emphasize that many of these undesirable reactions are of little consequence and do not interfere with treatment. In none of 100 carefully selected cases of rheumatoid arthritis in which Ward and co-workers administered cortisone therapy was it necessary to discontinue treatment because of side effects; in only 10 per cent to 20 per cent of cases in which long-term treatment was given have such effects forced discontinuation of treatment.[67, 115, 116] To avoid these reactions or keep them to a minimum it has been frequently necessary for the clinician to strike a compromise between desired therapeutic result and adverse reactions by using amounts of these hormones which only partially suppress the disease process under treatment. It is pertinent to note at this time that the incidence of side effects is influenced by the daily dose employed and the sex of the patients. In the experience of Ward and co-workers,[115] side effects occurred in 63 per cent of patient receiving 75 mg. a day, compared with only 12 per cent in those receiving less than 75 mg. daily. Among patients receiving 75 mg. daily, side effects developed in 50 per cent of the men, in 72 per cent of the premenopausal women and in 85 per cent of the postmenopausal women.

Copeman[21] noted a tendency to attach undue importance to mild side effects: "The preoccupation of many observers to mild side effects reminds one of a house-proud woman over-conscious of a speck of dust which the visitor has not noticed." It is certainly true that the adverse reactions from these hormones have received very wide publicity in countless case reports, reviews and even monographs.[20, 111] Such reports may have partially obscured the numerous cases in which these hormones have been employed successfully. In some instances they have been life-saving; in others they have restored invalids and semi-invalids to a much happier, useful state. The use of any potent medication carries with it a calculated risk. After four years of clinical trial, it seems evident, nevertheless, that physicians who have some understanding of the protean actions of cortisone and corticotropin and who accordingly select patients and observe them carefully, can employ the hormones with great advantage and small risk.

511 South Bonnie Brae.

REFERENCES

The full list of 125 references may be obtained from the author.

CASE REPORTS

- **Streptokinase-Streptodornase Therapy of Sterile Postpneumonic Empyema of Long Standing**
- **Nephrogram Following Acute Myocardial Infarction**
- **Coronary Insufficiency Following Intravenous Pyelography**

Streptokinase-Streptodornase Therapy of Sterile Postpneumonic Empyema of Long Standing

EDGAR ROSEN, M.D., Oakland

STREPTOKINASE-STREPTODORNASE (VARIDASE®) consists of two streptococcal enzymes that promote liquefaction and absorption of fibrin and purulent exudate. Streptodornase acts directly upon desoxyribonucleoprotein and desoxyribonucleic acid, which constitute a large portion of the sediment in purulent exudates. Streptokinase leads to essentially the same end result on fibrin, although it acts in a more indirect manner by catalyzing a fibrin-lysing system normally present in human serum. Encouraging results have been obtained by the use of these enzymes in combination for the removal of fibrin and pus in various pathological states.[4, 5, 6]

Tillett, Sherry and Read[7] reported upon the usefulness of this therapy in the treatment of postpneumococcic empyema.

In the case herein reported, streptokinase-streptodornase was rapidly effective against empyema of long duration after prolonged unsuccessful administration of customary treatment.

From the Veterans Administration Hospital, Oakland.

CASE REPORT

A 47-year-old Negro male laborer was hospitalized on February 21, 1952, because of acute respiratory illness of four days' duration. Symptoms included fever, shaking chills, sweating, headache, dyspnea, pleuritic pain in the right side of the chest and severe cough productive of more than a cupful a day of thick yellowish-green sputum which was frequently blood-streaked. In addition, the patient complained of swelling and soreness of the left foot since the onset of this illness. Except for several self-administered patent medicines, there had been no treatment up to the time of admittance to hospital.

The past history was vague. The patient said that ever since discharge from the Army in 1943 he had had a continuous "cold," manifested by chronic cough, usually productive of about two ounces of sputum daily, occasionally blood-streaked. Concomitantly he had intermittent ill-defined pain low in the chest on both sides, frequent headaches, occasional feverishness, chilly sensations and sweating. There had been no known exposure to tuberculosis. No history of previous arthritis was obtained.

The patient was normally developed, slender, poorly nourished, very dyspneic, extremely restless and apprehensive. Respirations were shallow, labored and numbered 60 per

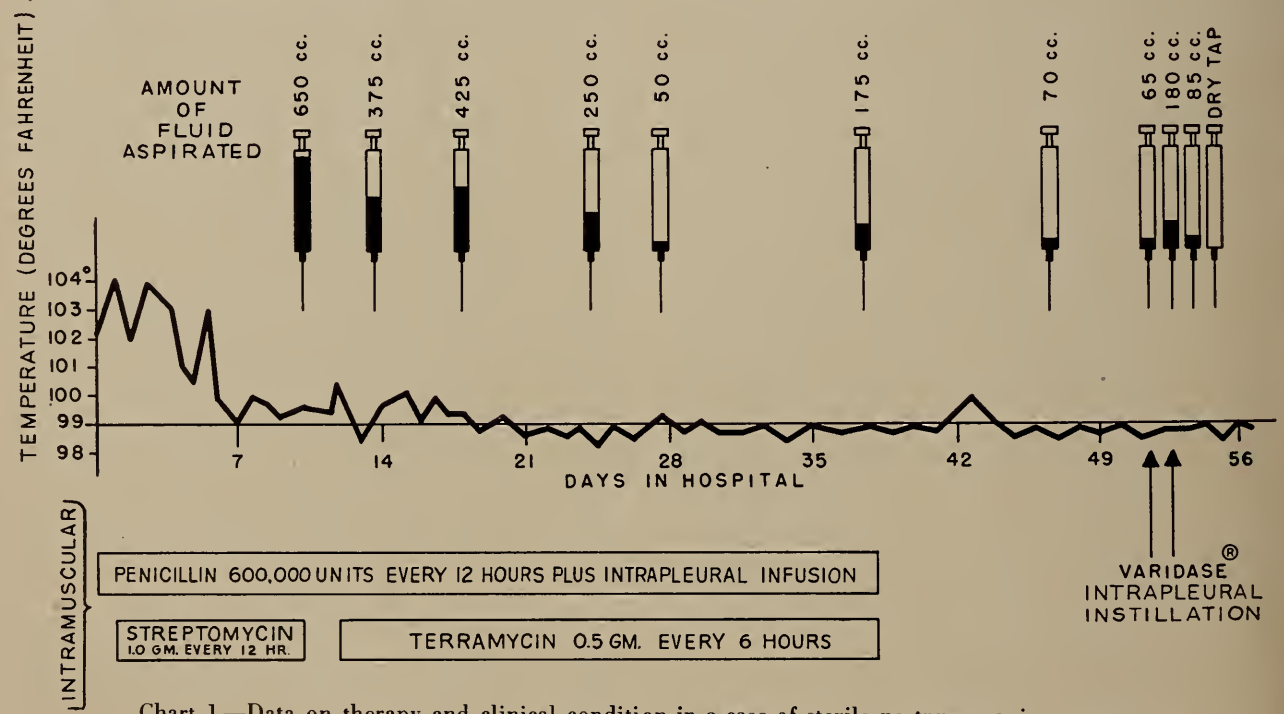


Chart 1.—Data on therapy and clinical condition in a case of sterile postpneumonic empyema.

minute. The rectal temperature was 102.2 degrees F., the pulse rate 128, and the blood pressure 94 mm. of mercury systolic and 60 mm. diastolic. Upon auscultation of the chest, evidence of extensive consolidation in the right middle lobe and of lesser involvement of the right lower lobe was noted. On the right side of the chest there were a respiratory lag, numerous fine to medium moist rales, dullness to percussion and bronchovesicular breath sounds. The left lung was clear. The heart sounds were normal except for sinus tachycardia.

Slight swelling, tenderness to palpation, increased heat, limitation of motion and slight erythema over the dorsal aspect were noted upon examination of the left foot. No inflammatory changes were noted in any other joints. There was slight clubbing of the fingers.

In roentgenograms of the chest dense consolidation of the middle lobe and moderate pneumonic density in the lower lobe of the right lung were noted. Films of the left foot showed no abnormality. Erythrocytes numbered 3.4 million per cu. mm. of blood and the hemoglobin content was 11.3 gm. per 100 cc. (both of these values rose to within normal limits later). Leukocytes numbered 2,950 per cu. mm. and the differential was 74 per cent segmented polymorphonuclear cells, 17 per cent band forms, 6 per cent lymphocytes, and 2 per cent metamyelocytes. Four days later leukocytes numbered 20,300, with 81 per cent segmented polymorphonuclear cells and 10 per cent band forms. Pneumococci of Type 7, sensitive in vitro to penicillin, streptomycin, oxytetracycline and chloramphenicol,* grew on a culture of blood. A test for cold agglutinins was negative. There was a heavy growth of hemolytic Staphylococcus albus on a culture of the sputum. In two examinations of sputum concentrates no acid-fast bacilli were observed. The content of uric acid in the blood was 3.4 mg. per 100 cc. and of bilirubin in the serum 0.91 mg. per 100 cc.

Therapy with penicillin given intramuscularly was begun the day of admittance, was supplemented by streptomycin the following day, and later by oxytetracycline (Terramycin®), as shown in Chart 1. During the first week the temperature was high (see Chart 1) and the patient was delirious. The following week, delirium and respiratory symptoms subsided. Thereafter, despite the development of empyema, there were no complaints except of residual soreness in the left foot for several weeks. Low grade fever continued during the second and third weeks, after which the temperature became normal.

Very little change was noted in roentgenograms of the chest taken five days after admittance, but films on the tenth hospital day showed a large encapsulated area of empyema lying mainly posteriorly. Thoracentesis was carried out from time to time thereafter (see Chart 1) and varying amounts of purulent cloudy tan fluid without any perceptible odor were withdrawn. Numerous cultures of this material showed no growth. Stained smears showed large numbers of polymorphonuclear cells, but no organisms were seen. The specific gravity of the fluid ranged from 1.020 to 1.022, and the protein content from 4.20 gm. to 5.20 gm. per 100 cc.

Combined systemic antibiotic therapy was continued up to the 38th hospital day, in addition to the injection of 100,000 units of crystalline penicillin into the empyemic cavity after each withdrawal of fluid. At first there was gradual reduction in the area of empyema but after several weeks it remained unchanged at approximately half its original size (Figure 1, *A*). Owing to the persistence of a large empyemic pocket (Figure 1, *B*) after six weeks, surgical excision was considered, but it was decided first to try intrapleural infusion of streptokinase-streptodornase. On the 52nd hospital day, 42 days after empyema was first noted, 65 cc. of empyemic fluid was aspirated and one vial of Varidase (streptokinase 100,000 units and streptodornase 25,000 units) dissolved in 20 cc. of normal saline solution was instilled into the empyemic cavity. Twenty-four hours later roentgenograms showed no appreciable change, and when thoracentesis was carried out 180 cc. of fluid much more turbid than that withdrawn the preceding day was aspirated. A second vial of Varidase was instilled and the following day 85 cc. of very turbid salmon-colored sanguineous fluid was aspirated. Roentgenograms taken immediately after this procedure showed a remarkable change. The right lung was now completely expanded and the empyemic cavity had disappeared, leaving only residual pleural thickening along the right lateral wall of the chest (Figure 1, *C*).

During the period of enzyme administration there was no fever but the patient complained of pronounced weakness, headache, nausea and vomiting. These symptoms subsided after the completion of enzyme therapy, and there were no further complaints.

Thereafter no further accumulation of fluid was observed in roentgenograms and the patient was discharged on April 23, 1952. He remained asymptomatic after leaving the hospital and roentgenograms six weeks after discharge showed practically complete resolution of the pleural thickening in the right side of the chest (Figure 1, *D*).

DISCUSSION

In view of the six weeks' duration of empyema in this case, it is of interest that so good a result was obtained with streptokinase-streptodornase therapy. In a previous series of patients treated with this agent for sterile postpneumococcic empyema, Tillett and associates[7] noted no definite benefit in two patients treated on the thirtieth and forty-second days of disease. It was felt that the poor result was owing to extensive cellular organization that had, presumably, taken place by then. Inasmuch as the enzymatic action of this agent is not effective against living cells, it is most advantageously employed before the suppurative process has progressed to the formation of organized tissue. The reason for the successful result in the present case is uncertain, but it may be postulated that little organization had taken place despite the prolonged duration of the empyema.

The optimal time for employment of this therapy has not been clearly established, but it seems reasonable that it should be used as early as clinical judgment will permit. Unfortunately, decision as to when to begin such treatment is often complicated by the fact that many patients in whom empyema eventually develops are at first critically ill with pneumonia, often accompanied by bacteremia. In these circumstances treatment of the patient takes precedence over treatment of the empyema, and injection of enzymes may wisely be postponed until the pneumonia and systemic toxicity have been controlled to some degree by antibiotics.

The variations in the problems encountered and the limited experience thus far accumulated have made it impossible to formulate any uniform rules for guidance in the enzymatic treatment of empyema. The optimal dosage and frequency of enzyme infusions must depend upon careful appraisal of the clinical situation in its entirety, coupled with knowledge concerning the basic action of the enzymes. Other standard therapeutic measures must be employed concurrently as indicated, including antibiotics to combat active infection, and suitable provision for drainage. Successful enzymatic action may be expected to produce increased amounts of liquefied purulent material, which should be removed from the pleural cavity as completely as possible. This may be accomplished by thoracentesis performed approximately eight to twenty-four hours after enzyme infusion, or by surgical means. Miller and co-workers[2, 3] advo-

*The typing of the organism and the sensitivity studies were performed through the courtesy of Dr. Lowell A. Rantz, at the Department of Bacteriology of the Stanford University School of Medicine.

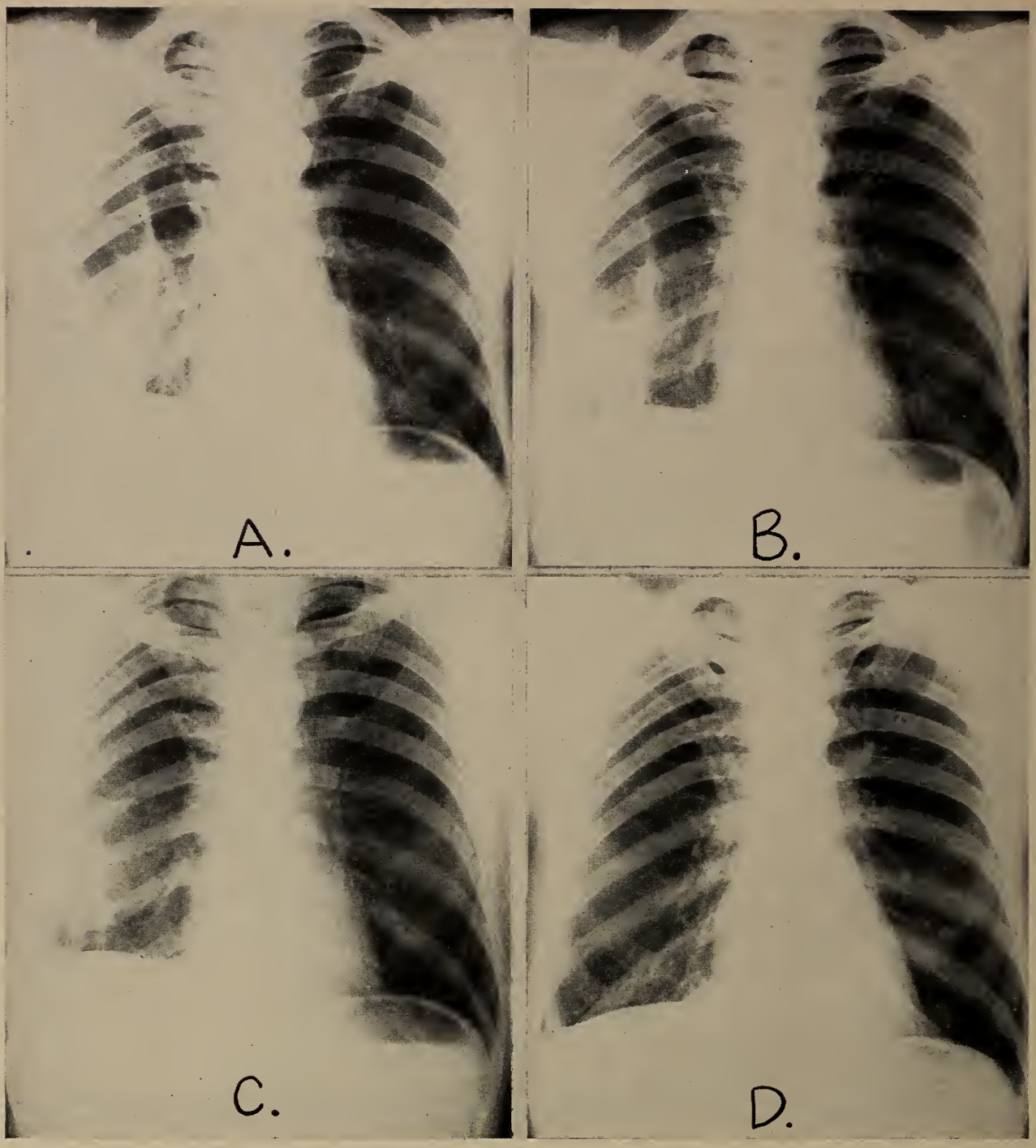


Figure 1.—*A.* (March 24, 1952) Large empyemic pocket persistent after three weeks of antibiotic therapy and thoracentesis. *B.* (April 14, 1952) Only slight reduction in size after an additional three weeks. *C.* (April 16, 1952) Following two daily injections of Varidase, the empyemic cavity has disappeared, leaving only residual pleural thickening. *D.* (June 16, 1952) Normal roentgenogram except for minimal pleural thickening.

cated the routine use of intercostal closed catheter drainage, with the tube kept clamped for as much as eight hours after instillation of enzymes but opened sooner if untoward toxic manifestations appear.

The toxic reactions[4] thus far observed have in general been transitory and not of serious consequence. Leukocytosis has been frequently observed, as well as febrile reactions which may be accompanied by systemic symptoms such as headache, myalgia or arthralgia, malaise, nausea or vomiting. Minor transient urinary abnormalities have also been noted. Questionable allergic reactions have been described in only a few instances. Circulatory collapse in a patient with pleural effusion was reported by Baum and Oransky,[1] who attributed it to anaphylactoid reaction. However, this interpretation was later questioned by Miller and Long[3], who emphasized that the sudden accumulation of large amounts of fluid in the pleural space could lead to mediastinal displacement and cardiorespiratory embarrassment.

SUMMARY

In a case of sterile postpneumococcic empyema rapid resolution of the lesion occurred upon intrapleural instillation of streptokinase-streptodornase, following six weeks of unsuccessful conventional management.

447 Twenty-ninth Street.

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Nephrogram Following Acute Myocardial Infarction

HYMAN PECK, M.D., Los Angeles

THE TERM NEPHROGRAM denotes opacification of the roentgenographic renal shadows owing to the presence of contrast media in either the finer elements of the renal vasculature or the various segments of the nephron or both. Nephrograms were first observed in cases of obstructive uropathy.[3, 5] In such conditions the increased intrapelvic pressure causes a decrease in glomerular filtration but does not interfere with the flow of the medium across the tubular epithelium into the lumina where, since it cannot be excreted, it concentrates.[2]

The radiographic demonstration of vessels in renal parenchyma was first noted as an incidental finding during angiocardiography.[4] It may occur also during translumbar aortography. These procedures result in high concentrations of the medium in the blood in the renal vessels. Nephrograms may occur in association with a reduction in blood pressure during intravenous pyelography, as was reported by Wickbom.[6] In the two cases in which Wickbom observed the phenomenon the decrease in blood pressure was thought to be due primarily to the use of a compression band on the aorta and perhaps secondarily to a reflex in the autonomic nervous system.

In the case to be reported here, no compression was used and nephrogram occurred in association with a decrease in blood pressure owing to acute myocardial infarction.

CASE REPORT

A 67-year-old white male with a diagnosis of hypertensive cardiac disease was referred for intravenous urography with the additional diagnosis of benign prostatic hypertrophy with symptoms of urgency and frequency of urination, nocturia and dribbling. Twenty cc. of 35 per cent Diodrast® was given intravenously following negative result of an intradermal test for Diodrast sensitivity. Approximately 20 minutes later the patient was in a state of shock. An electrocardiogram made within an hour showed posterior myocardial infarction. The blood pressure at this time was 60 mm. of mercury systolic and 50 mm. diastolic. In subsequent review of films it was noted that kidney and psoas shadows were plainly visible on a film (Figure 1) taken before the administration of Diodrast. Renal opacification with only minimal dye in the urinary bladder and none in the pelves and calyces was seen on subsequent serial films at 5, 10, 15 and 25 minutes (Figure 2).

From the Veterans Administration Center, Los Angeles, and the Department of Radiology, School of Medicine, University of California Medical Center, Los Angeles.

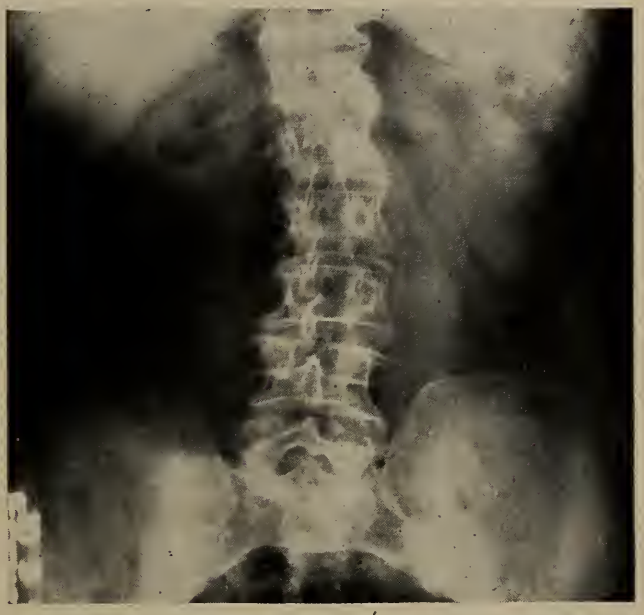


Figure 1.—Preliminary film of abdomen taken before intravenous urography, showing kidney and psoas shadows.

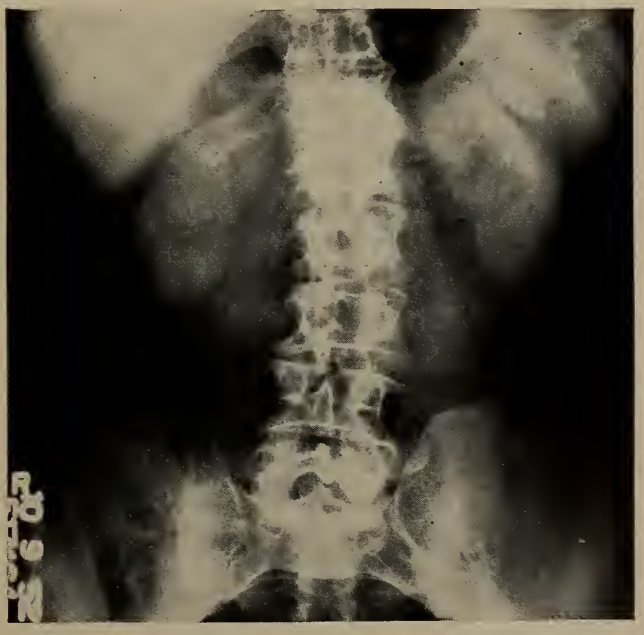


Figure 2.—Nephrogram. Kidney shadows are opacified.

DISCUSSION

It is known that urinary filtration stops when the arterial systolic blood pressure decreases to 60 mm. of mercury, as it did in the present case owing to myocardial infarction. With the arterial pressure at that level the pressure in the afferent arterioles is about 36 mm. of mercury and the orthostatic pressure is approximately equal to the pressure in the renal calyces (about 5 mm. of mercury) when the osmotic pressure of albumin in the blood (30 to 40 mm. of mercury) is taken into account.[1]

SUMMARY

Opacification of renal shadows during intravenous urography may occur in the presence of a decrease in blood pressure. A case in which a nephrogram resulted from decreased pressure owing to acute myocardial infarction is reported.

Veterans Administration Center, Los Angeles 25.

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Coronary Insufficiency Following Intravenous Pyelography

CARL C. EPSTEIN, M.D., Oakland

As with many another valuable diagnostic procedure, some risk, although statistically slight, is entailed in intravenous pyelography. In 1942, Pendergrass and co-workers[3] became interested in this subject as the result of the death of a patient following an injection of Diodrast.® They sent three thousand questionnaires to radiologists and urologists in the United States and Canada, and the replies revealed 26 deaths following Diodrast injection in addition to 11 that already had been reported. Since then there have been additional reports of death from this cause.[1, 6] The survey by Pendergrass also revealed that non-fatal reactions occasionally occurred following pyelography, some minor in nature, others more alarming. In the following case there was an unusual sequence of symptoms in a patient following pyelography, specifically a reaction consisting of pain in the chest and electrocardiographic evidence of coronary insufficiency.

CASE REPORT

A 57-year-old white male carpenter was admitted to hospital Jan. 14, 1953, with a presumptive diagnosis of carcinoma of the stomach based on roentgenograms taken by a physician in private practice. The patient related that on December 23, 1952, he had had "flu" and had been given penicillin by mouth for three days. A week later he was told that he looked anemic. Laboratory studies, the patient said, had shown "hemoglobin below 62" and blood in the stool. Carcinoma of the stomach was diagnosed on the basis of some irregularity about the pylorus noted in a gastrointestinal series.

Questioning of the patient elicited no indication of symptoms referable to the gastrointestinal tract. He had noted no lessening of appetite and there had been no loss of weight.

Six years previously he was refused insurance because of albumin in the urine, and in early December, 1952, he was rejected as a blood donor when, for the first time, he was told that his blood pressure was high.

Upon physical examination the patient appeared to be well nourished and in no distress, but the skin was distinctly sallow. The temperature, pulse and respirations were normal. The blood pressure was 192 mm. of mercury systolic and 102 mm. diastolic. The radial arteries were slightly thickened, and the arterioles of the ocular fundi were narrowed and tortuous. The heart tones were normal except for slight accentuation of the second aortic sound. The lung fields were clear to auscultation. No masses, enlargement of organs or tenderness were noted in palpation of the abdomen. No abnormalities were noted in digital examination of the rectum and prostate.

Erythrocytes numbered 2,800,000 per cu. mm. of blood and the hemoglobin content was 9.3 gm. per 100 cc. The number of leukocytes and the differential were within normal range. Urinalysis showed a trace of albumin, and upon microscopic examination a moderate number of hyaline, granular, and epithelial casts was noted. A urine concentration test showed a fixed specific gravity of 1.010. The urea nitrogen content of the blood was 49 mg. per 100 cc. at the time of admittance and a week later it was 60 mg. per 100 cc. Results of additional studies of the blood were as follows: creatinine, 4.5 mg. per 100 cc.; carbon dioxide combining power, 41 volumes per 100 cc.; total proteins, 6.3 gm. per 100 cc., with 4 gm. albumin and 2.3 gm. of globulin per 100 cc.; calcium 11.2 mg. per 100 cc.; phosphorus 4 mg. per 100 cc.; glucose (fasting) 105 mg. per 100 cc. The result of a Kahn test was negative for syphilis.

In an electrocardiogram there were inverted T waves in aVL and low amplitude T waves in V-6, suggesting myocardial disease of the lateral wall (Figure 1, A).

No abnormalities were noted in a roentgenogram of the chest. In roentgen study of the upper gastrointestinal tract an ulcer crater in the pyloric region of the stomach, with adjacent mucosal inflammatory changes, was noted. An intravenous pyelogram, described below in detail, failed to produce satisfactory visualization due to poor excretion of the dye.

The patient was treated with a conventional "ulcer regimen" and remained free of digestive complaints. Healing of the ulcer crater was observed in later roentgen studies.

It was felt that the patient also had chronic nephritis of unknown cause, and further diagnostic studies were requested. Intravenous pyelography was carried out on January 28, 1953, with 20 cc. of 75 per cent Neo-Iopax® used as the contrast medium. The customary procedure for intravenous pyelography at this hospital is to inject 1 cc. of the dye, wait one minute, and, if no untoward reaction or symptoms develop, inject the remainder of the dye over a period of one to two minutes. The patient received the dye at 9:30 a.m. without any difficulty, and roentgenograms were taken

From the Veterans Administration Hospital, Oakland.

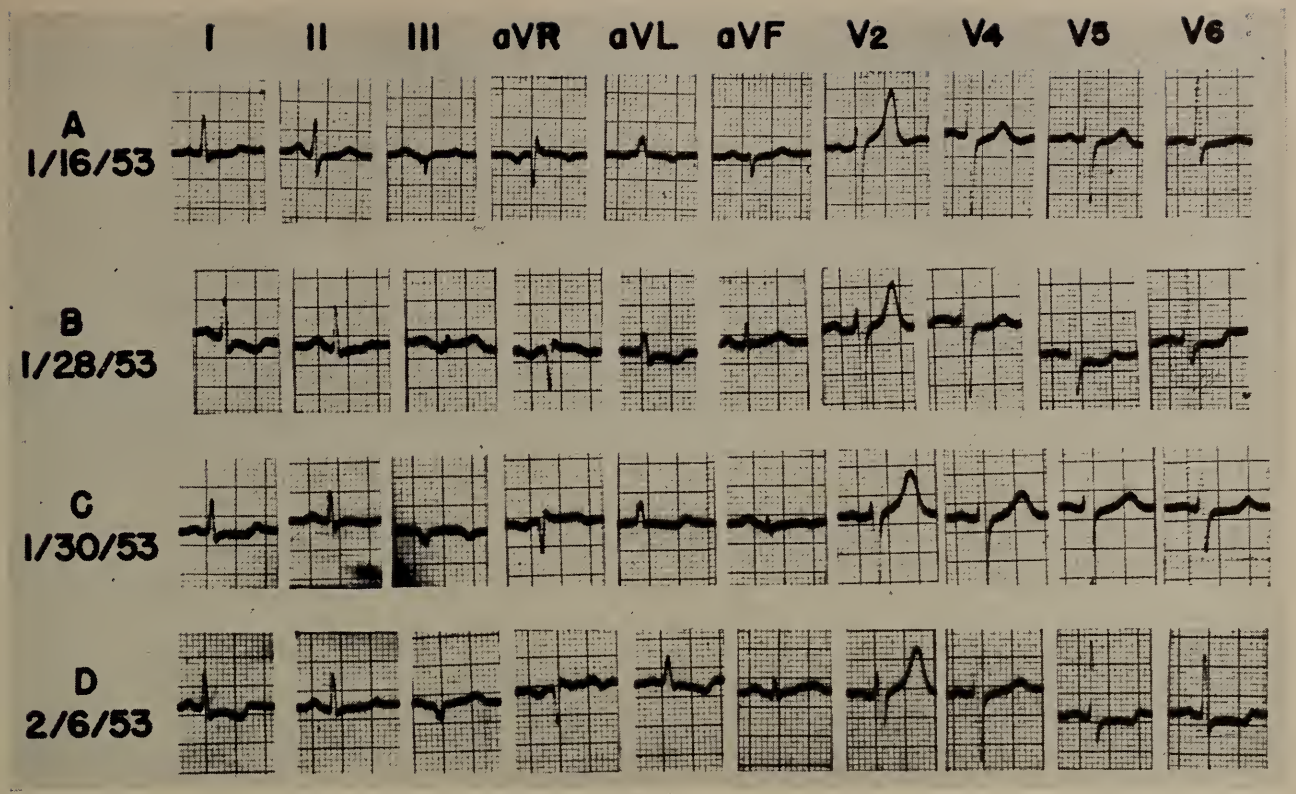


Figure 1.—*A.* Electrocardiogram taken before intravenous pyelography shows an inverted T wave in aVL and low amplitude T wave in V-6 suggesting lateral wall disease. *B.* Electrocardiogram taken about two hours after dye injection and one hour after onset of thoracic pain shows distinct ST segment depression in leads 1, aVL, V-4, V-5 and V-6 compatible with coronary insufficiency. *C.* Two days after reaction: Less ST segment depression in left precordial leads and appearance of T wave inversion in leads 3 and aVF. *D.* Nine days after the reaction: Slightly more ST depression in left precordial leads with T waves now upright in leads 3 and aVF.

at three, ten, and twenty minutes after dye injection with a compression bag over the lower abdomen, and at twenty minutes with the patient upright without the compression bag. The patient was returned to the ward at 10 a.m. and ate breakfast. A few minutes later he vomited, and a shaking chill lasting about one-half hour then occurred. It was followed by a "pressing" pain in the anterior chest that radiated into both arms and was accompanied by dyspnea. The heart tones were normal, the pulse rate was 92, and the blood pressure was 220 mm. of mercury systolic and 120 mm. diastolic. A hypodermic injection of 100 mg. of meperidine hydrochloride was given and the pain subsided gradually over a period of about an hour. Thereafter the patient remained free of pain and had no other complaints. Four hours after the chill, the temperature was 99.6 degrees F., but it then declined and remained normal.

An electrocardiogram taken approximately two hours after the injection of the dye (one hour after the onset of thoracic pain) revealed ST segment depressions in leads 1, aVL, V-4, V-5 and V-6 (Figure 1, B). This, when compared with the tracing made before intravenous pyelography (Figure 1, A) was compatible with a diagnosis of coronary insufficiency. An electrocardiogram two days after the intravenous pyelography showed less ST depression in the left precordial leads and the appearance of T-wave inversion in leads 3, and aVF (Figure 1, C). A week later a fourth electrocardiogram continued to show slightly more ST depression in the left precordial leads with the T waves again becoming upright in leads 3 and aVF (Figure 1, D).

COMMENT

Reactions following intravenous pyelography have been attributed to hypersensitivity to or toxicity of iodine, the differentiation for the most part being very difficult. Immediate deaths have been considered as owing to anaphylactic reactions; delayed deaths as owing to toxic reaction. The non-fatal reactions include purely local manifestations of the intravenous injection itself, such as pain, burning, numbness of the arm and shoulder, probably due to venospasm and occasionally venous thrombosis; or generalized symptoms such as flushing, nausea and vomiting, itching, urticaria, rhinitis, lacrimation, salivation, sense of constriction in the larynx, cerebral irritation, syncope, shock, chills, fever, and tachycardia. Singer,[7] who reported general reactions in 61 of 160 cases, distinguished allergic symptoms, such as urticaria, edema, asthma, rhinorrhea, and sneezing, from neurovascular manifestations such as flushing, nausea and vomiting, syncope, pallor, and sense of constriction (not further elaborated). Robins[5] grouped reactions into three different categories: (1) Psychogenic, with symptoms of nervousness, restlessness, faintness, numbness and tingling of extremities, nausea, and pain in the back—patients with reaction of this type responding well to reassurance; (2) autonomic or neurovascular, consisting of facial flushing, pallor, cyanosis, evidence of peripheral vascular failure, sweating, dilation of pupils, coldness of extremities, tachycardia, rapid respirations, nausea and vomiting—these symptoms usually occurring during or shortly after intravenous administration of the dye, usually being mild, although occasion-

ally severe; (3) allergic, consisting of urticaria, rhinitis, sneezing, wheezing, difficulty in breathing, conjunctivitis, and edema of eyelids and face. Naterman and Robins[2] felt that there was no reliable method of determining whether or not a reaction was due to allergic sensitivity. Accordingly, any symptom following injection of Diodrast was considered a general reaction. In the series of cases studied by Naterman and Robins, 81 of 404 patients had reactions that for the most part resembled those reactions or symptoms described above. It was of interest, as regards the case reported herein, that three (3.7 per cent) of the patients who had reactions were described as having "chest symptoms": one patient vomited, coughed and choked for a few minutes very soon after the injection; another choked, coughed, became cyanotic and "brought up yellowish fluid"; the third choked and showed evidence of cardiovascular collapse. The authors made no mention of any coronary component of these reactions. Pritchard[4] mentioned among the reactions following intravenous pyelography the symptom of "slight precordial tightness" but did not discuss the symptom further.

It is not the purpose of this report to discuss why these reactions occur or how to prevent them. A review of the various methods of determining sensitivity suggests unpredictability in the correlation between testing and reaction. Nevertheless, there is uniformity in opinion that the procedure is hazardous in highly allergic, severely uremic, or severely jaundiced patients.

SUMMARY

A case of coronary insufficiency following intravenous pyelography is presented, as well as a brief review of various types of reactions and symptoms which may follow such a procedure.

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Voluntary Health Insurance

THE AMERICAN PEOPLE voluntarily increased their protection against the unexpected costs of hospital, surgical and medical care to new record high levels in 1952, the Health Insurance Council reported in its annual survey of accident and health coverage in the United States. Every section of the country participated in the gains, the Council said.

Cash benefits flowing from voluntary health protection aggregated more than $2 billions in 1952, the Council reported. About half this amount went to help meet the cost of hospitalization, and over a half billion dollars more went toward operations and doctors' bills. Another half billion dollars represented benefit payments by insurance companies replacing income lost due to accident or sickness. Thus voluntary health protection is now taking care of a substantial part of the nation's health bill, the Council stated.

The total number of persons covered against hospital expense approached the 92-million mark at the end of last year, an increase of more than 5½ million, or 7 per cent, over 1951.

More than 73 million persons were protected against the cost of operations under surgical expense coverage at the end of 1952, the Council said, an increase of more than 7½ million persons, or 12 per cent, over the year before.

Approximately 8 million more persons than in 1951 were protected against doctors' bills under medical expense coverage at the end of last year. This increase brought the total number of persons so protected to nearly 36 million and represented an increase of 29 per cent over 1951.

The year likewise saw increasing public acceptance of major-medical expense coverage, the newest form of voluntary health protection designed to help meet the catastrophic costs of very serious illness. Nearly 700,000 persons had this form of protection at the end of last year, the Council stated.

Copies of this report may be obtained from the Health Insurance Council, 488 Madison Avenue, New York 22, N. Y.

California MEDICINE

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EDITORIAL

The Interim Session

On December 12 and 13 the California Medical Association will hold its 1953 Interim Session of the House of Delegates. While interim sessions have been held in two previous years, this one may be different—it may be the last of its kind except in event of pressing need.

The first Interim Session of the House of Delegates was held in 1951, under terms of the revised Constitution and By-Laws adopted at that year's annual session. It was frankly experimental and it is obvious that the proponents of these winter meetings had various reasons for favoring them.

In the rewriting of the Constitution and By-Laws, a job that took two years and numerous meetings, arguments were advanced for writing into the By-Laws a provision for a mandatory session of the House of Delegates between the annual session meetings. Some proponents expressed the belief that the business of the Association had grown to the point where decisions could not be deferred for a full year. Others felt that the C.M.A. Council, which acts officially between meetings of the House, too often had to make decisions on matters that might better be considered by the House. Still others believed that more frequent meetings of the House would bring about a spirit of closer kinship between the delegates from all parts of the state.

Whatever the reason, the Interim Session became a part of the C.M.A. official procedure in 1951 when the revised Constitution and By-Laws were approved and put into effect.

With its first meeting, the Interim Session heard resolutions which would do away with it. Delegates who believed an annual meeting was sufficient sought to rid the Association of the mandate for a mid-year business session. Their contention was not approved by the House, probably on the basis that the Interim Session should be given a fair trial before its doom was considered.

In each succeeding session the same question has been raised. Both annual and interim sessions of the House have considered renewed proposals to abandon the rule that the Interim Session must be held and to rely upon the existing provision that special sessions may be held, upon recommendation by the Council or upon petition from delegates themselves.

For technical reasons, if none other, these proposals did not succeed until the 1953 Annual Session, when the House of Delegates passed amendments which set up machinery for calling an Interim Session only when such a meeting is deemed necessary. Under existing By-Laws an Interim Session will not be held in any year unless the Council recommends in advance of the Annual Session that the Interim Session be held that year.

This provision undoubtedly does not satisfy those who believe the Council's authority in the management of the Association's policies between meetings of the House is too great. It probably does satisfy those who feel that an Interim Session is not needed every year.

If the Council does not recommend an Interim Session, this inaction will certainly result in clarifying a situation in which there had come to be considerable confusion as to what business before the House was to be acted upon immediately as an emergency and what postponed until the next meeting.

Under the system of two House meetings each year, the theory was that business introduced at any session would be held over for consideration at the next meeting. This plan was supposed to eliminate hasty or ill-advised action on an official basis. At the same time, provision had to be made for immediate action by the House on matters of immediate importance; therefore, it was decided that business deemed of an emergency nature could be introduced

and acted upon at the same session of the House of Delegates.

In practice, this emergency provision would appear to have been overused. Any delegate needed only introduce his resolution as an emergency and his fellow delegates would sympathetically agree that the matter should be voted on at that session. Their agreement was more a consent to take immediate action than a recognition of a real emergency in the subject of the resolution.

The original concept of the drafters of the revised Constitution and By-Laws was that the six-month period intervening between meetings of the House would allow time for mature consideration of business. As the plan operated, the business referred to a reference committee at a meeting of the House was considered at the time of the meeting at which it was introduced and the committees drew up tentative reports, subject to amendment if opinions submitted in the next six months were such as would alter the tentative recommendation. Actually, the committees received almost no correspondence concerning any of the held-over business.

It should be noted that the House of Delegates of the American Medical Association has been holding interim sessions for the past six years. It should also be noted that many A.M.A. delegates feel that this session is not needed and is nothing more than a time-consuming demand upon them. In its development, the A.M.A. Clinical (or interim) Session has become much more important as a scientific clinical session than as a business meeting.

The California Medical Association has given this idea a trial, a trial which may terminate next month. The action of the House of Delegates in leaving the question of future interim or special sessions up to the recommendation of the Council, or to petition by a majority of the delegates, would seem to indicate that the time-honored system of annual sessions, with the Council acting officially between such sessions, will continue to be a satisfactory way of handling the affairs of the Association.

CALIFORNIA MEDICAL ASSOCIATION INTERIM SESSION

SCIENTIFIC PROGRAM

SATURDAY, DECEMBER 12, 1953

"*Tuberculosis—Today and Tomorrow*"—Sidney J. Shipman, M.D., San Francisco

SUNDAY, DECEMBER 13, 1953

"*New Drugs*"—Henry Gibbons III, M.D., San Francisco

NEWS & NOTES

NATIONAL • STATE • COUNTY

LOS ANGELES

Dr. Ian Macdonald, Los Angeles, chairman of the Cancer Commission of the California Medical Association, was elected president of the California division of the American Cancer Society at a meeting of the organization held recently in San Francisco. **Dr. Andrew H. Dowdy** of Los Angeles was elected secretary. Dr. Otto Pflueger, Dr. Robert A. Scarborough and Dr. David A. Wood of San Francisco and Dr. Russell Fisher and Dr. E. M. Butt of Los Angeles were elected to the executive committee of the California division.

* * *

Dr. Paul D. Foster and **Dr. R. De Barondes** of Los Angeles were awarded fellowships in the American Medical Writers' Association at the tenth annual meeting of the organization which was held in Springfield, Illinois, in September. The awards are made "in recognition of high qualifications, personal and professional, and of established standing as a medical writer, journalist or publisher."

* * *

The International College of Surgeons will hold a regional meeting of the United States Section, including the states of California, Nevada, Oregon, Arizona and Washington, at the Ambassador Hotel in Los Angeles on Saturday and Sunday, November 28 and 29, 1953.

SAN FRANCISCO

The appointment of **Dr. George B. Robson** of San Francisco as acting assistant dean of the Stanford University School of Medicine was announced recently by Wallace Sterling, president of the University. Dr. Robson will continue in private practice. At the same time, Warner P. Geigenmuller was promoted from assistant superintendent to superintendent of Stanford hospitals.

Two new appointments to the faculty of the medical school also were announced. Dr. Benton D. King was named associate clinical professor of surgery and Dr. John D. Blair assistant clinical professor of surgery.

* * *

Dr. Henry Gibbons, III, of San Francisco, was elected president of the State of California Board of Medical Examiners at a meeting of the board late last month. Dr. Gibbons has been a member of the board since February 1952. **Dr. Frank Otto** of Los Angeles was elected vice-president and **Dr. Louis Jones** of Roseville was reelected secretary.

* * *

The election of **Dr. Walter Beckh** of San Francisco to the presidency of the California Society of Internal Medicine was announced by the society last month following the annual meeting held at Yosemite National Park. Dr. Paul I. Hoagland, Jr., of Pasadena, was elected vice-president and Dr. James H. Thompson of San Francisco, secretary-treasurer.

Dr. Francis Scott Smyth, dean of the University of California School of Medicine, San Francisco, has been appointed by President Eisenhower to the Board of Foreign Scholarships for a term of three years.

The board is concerned with the management of the Fullbright Fellowship program of the Department of State.

* * *

Dr. Robert Wartenberg, clinical professor of neurology, University of California School of Medicine, has been elected an honorary member of the Association of German Neuropathologists.

SAN JOAQUIN

Dr. Freeman H. Adams on October 1 became superintendent and medical director of Stockton State Hospital, succeeding **Dr. Thomas W. Hagerty,** who retired after serving four years in that position. Dr. Adams has been on the staff of the hospital since 1946 and had served as assistant superintendent for more than a year.

GENERAL

The seventeenth annual meeting of the **New Orleans Graduate Medical Assembly** will be held March 8 to 11, with headquarters at the Municipal Auditorium. Announcement of the meeting said that 18 outstanding guest speakers will participate and that their presentations will be of interest to both specialists and general practitioners. The program will include discussions on many topics of current medical interest, in addition to clinicopathologic conferences, symposia, three dimensional surgical motion pictures, round-table luncheons and technical exhibits.

Details are available at the office of the Assembly, Room 103, 1430 Tulane Avenue, New Orleans 12, Louisiana.

* * *

The eighth annual University of Florida midwinter **seminar in ophthalmology and otolaryngology** will be held at the Sans Souci Hotel in Miami Beach the week of January 18. The lectures on ophthalmology will be presented on January 18, 19, and 20, and those on otolaryngology on January 21, 22, and 23. A midweek feature will be the midwinter convention of the Florida Society of Ophthalmology and Otolaryngology on Wednesday afternoon, January 20, to which all registrants are invited.

The seminar lecturers on ophthalmology this year are Dr. W. B. Anderson, Durham, N. C.; Dr. W. P. Beetham, Boston; Dr. W. C. Owens, Baltimore; Dr. A. B. Reese and Dr. M. C. Wheeler, both of New York City. Those lecturing on otolaryngology are Dr. E. N. Broyles, Baltimore; Dr. H. P. House, Los Angeles; Dr. W. J. McNally, Montreal, Canada; Dr. Dorothy Wolff and Dr. D. Woodman, New York City.

* * *

The annual **meeting of the American Heart Association** in 1954 will be held at the Conrad Hilton Hotel in Chicago. The Assembly Panels and the General Assembly will be held on Thursday and Friday, April 1 and 2, and will be followed by a specific scientific program on clinical cardiology on Saturday and Sunday, April 3 and 4, conducted under the auspices of the newly formed Section on Clinical Cardiology of the Scientific Council. These sessions will immediately precede the annual meeting of the American College of Physicians.

POSTGRADUATE EDUCATION NOTICES

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

In Los Angeles

Dermatology in General Practice (limited to 20 students).

Date: Nov. 11 to Dec. 16 (date changed from Oct. 7 to Nov. 11). Spring dates: Feb. 17 to March 24.

Fee: $30.00.

Surgical Anatomy (limited to 30 students).

Date: November 5, 1953-January 27, 1954.

Fee: $75.00.

Dermatology Conference.

Date: February 11, 12, 1954.

Fee: $35.00.

Anesthesiology.

Date: Spring, 1954.

Fee: Details to be announced.

In Long Beach:

Techniques of Hypnosis (limited to 15 students).

Date: October 9, 1953.

Fee: $100.00.

Office Gynecology.

Date: Nov. 19, 20, 21.

In West Los Angeles:

Advanced Course Techniques and Application of Hypnosis (limited to 15 students).

Date: October 23, 1953.

Fee: $100.00.

Contact: Dr. Thomas H. Sternberg, Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Ophthalmological Conference. University Extension Building, 540 Powell Street, San Francisco. A four-day program on diseases of the eye, including three periods of instruction in eye surgery on animals; symposia on external diseases, muscular defects, glaucoma, cataract, neurophthalmology, therapeutics, retinal detachment. Friday evening at 8:00 p.m., the Eighth Francis L. Proctor Lecture: "Delayed Restoration of the Anterior Chamber," by Dr. Peter C. Kronfeld, Professor of Ophthalmology, University of Illinois School of Medicine.

Date: December 2, 3, 4, 5, 1953.

Fee: $75.00.

Microscopy and Photomicrography.

Date: January 14 to June 3, 1954.

Contact: Office of Medical Extension, University of California School of Medicine, University of California Medical Center, San Francisco 22, California.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Ophthalmology Conference. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye; or eye, ear, nose and throat. Registration limited to thirty physicians. Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

Contact: Office of the Dean, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15, California.

STOCKTON POSTGRADUATE STUDY CLUB

Fall Lecture Series, 1953

November 19—Treatment of Infertility, Sterility and Habitual Abortion—Abraham R. Abarbanel, M.D., College of Medical Evangelists, Los Angeles.

SEMINARS OF THE ALUMNI COMMITTEE OF THE CHILDREN'S HOSPITAL, SAN FRANCISCO

December 5, 1953—Surgery and Anesthesia in Childhood, with a discussion on the effects of hospitalization on the young child for surgical procedures.

January 23, 1954—The Problems of Prematurity and the Newborn Infant.

March 30, 1954—Acute and Chronic Infections and the Choice of Antibiotics in Treatment.

April 24, 1954—Childhood Ecology, with a discussion of physical, mental and emotional growth and development of the young child; the effects of deprivation of maternal care, and the impact of environment on the child.

A fee of $15.00 will be charged for attendance at all the seminars and those who wish to have further details or be on the mailing list for such details may write to: H. E. Thelander, M.D., Children's Hospital, 3700 California Street, San Francisco.



THE PHYSICIAN'S *Bookshelf*

YOUR CHILD AND HIS PROBLEMS—A Basic Guide for Parents. Joseph D. Teicher, M.D., Director, Child Guidance Clinic of Los Angeles, Attending Physician (Psychiatry), Children's Hospital, Los Angeles; formerly Psychiatrist in Charge, Child Guidance Clinic, St. Luke's Hospital, New York City. Little, Brown and Company, Boston, Mass., 1953. 301 pages, $3.75.

Of the many books now coming out for the guidance of parents concerning the management of their children, this is one which the physician can recommend as psychiatrically sound and based upon extensive clinical experience. While the book, purportedly, is directed primarily to parents, the physician may find its clinical orientation and its wealth of suggestions useful in his opportunities to counsel parents in regard to the normal development of children, their management, and the common difficulties met in their socialization.

The book is simply and interestingly written, and the chapters are well outlined with topic headings. It begins with a consideration of parental feelings before and after the birth of a child, describes the normal personality development of the infant, and advises in regard to management of the child's eating, toilet and sleeping routines. Chapters are then devoted to such topics as sexual education, jealousy, fears, play and possessions, and "limitations, frustrations, and doing the right thing." "Family stress and strains" are also discussed with an understanding of, and sympathy for, parental difficulties. The contents also include chapters on children's school problems, the effect of comic books, radio, movies, and television upon children, and the psychological handling of physical illness and handicaps. There is even an attempt to explain to parents the use of psychological tests.

To the extent that parents are mature, reasonably well adjusted themselves, and thus capable of making use of information and advice, this book should well serve in the interests of the mental health of children. Parents who are disturbed by their own emotional and social difficulties, however, and those whose faulty relationship to their children is determined by inner forces of which they are unaware, will be able to make the best use of the knowledge contained in this book only if it comes to them through a therapeutic relationship with their physician.

* * *

THE CONCEPTION OF DISEASE—Its History, Its Version and Its Nature. Walther Riese, M.D., Philosophical Library, New York, 1953. 120 pages, $3.75.

Meditation is a gentle art, reputedly best practiced in a quiet place—by mountain stream, by lake, on distant peak—but in the noise-rent city or gusty seashore it seems to lead to introspection. And this in turn, if pen and paper be nearby, to treatise philosophic or book conceptual.

This small book skims through the author's conceptions of the Stoic, Platonic and anthropologic viewpoints of disease, pauses to consider the moral and artistic aspects, and then plunges into a series of short chapters on the Hippocratic, Baglivian, Galenic and anatomic conceptions. Then follow sections on the social, psychologic, ontologic and, believe it or not, biographic conceptions. Finally, after a short excursion through the dialectic underbrush, the metaphysical conception is reached.

Some of the passages are refreshing and highly informative, but many seem to this reviewer to bear the ponderous glove. We are reminded that Plato held that disease was the result of excess or defect of the four corporal constituents (earth, fire, water and air). Proper proportions of these were held to be equally essential for health. Conversely, the relations of soul and body should be in equal balance. A relatively large or impassioned soul convulsed the inner man; too large or strong a body debased the soul. . . . "ignorance being considered the greatest of diseases." A verity indeed.

The chapter on disease and art travels the well-worn ground of impressionistic and expressionistic art forms, debating the difficulty of distinguishing the psychotic from the unconventional, and stressing that while disease may stimulate talent it does not create art. Freud bears not infrequent reference, and Nietzsche a modicum.

The author's own conception of disease is suggested by his emphasis that disease and the individual are both abstractions, ergo all is abstract and nature escapes our knowledge. Perhaps it should have been added that disease is a commonality and therefore a relatively normal phenomenon, just as discord, unhappiness and war are normal, whereas health, tranquillity and peace are distinctly rare, or unusual, or in other words abnormal.

The gentle and confused reader may now wish to return to Thomas Sydenham who observed "A disease, in my opinion, how prejudicial soever its causes may be to the body, is no more than a vigorous effort of nature to throw off the morbific matter, and thus recover the patient."

* * *

CHILD DEVELOPMENT—The Process of Growing Up in Society. William E. Martin and Celia Burns Stendler, Professor of Education, University of Illinois—under the editorship of Willard B. Spalding, Oregon State System of Higher Education. Harcourt, Brace and Company, New York, 1953. 519 pages, $6.50.

This is a textbook in child development. Accordingly, it is organized for a systematic study of the subject, contains throughout provocative questions for discussion, includes 32 pages of photographic illustrations (also a sprinkling of cartoons), and concludes each chapter with a small but well selected and recent bibliography for further reading. It is more than a description of child behavior at the various stages of development with which physicians are becoming more or less familiar; rather, it draws upon the fields of biology, physiology, pediatrics, sociology, anthropology, and

psychology in an attempt to explain how children become socialized.

The book is divided into four parts. Part I discusses the child as a human being. It begins with a consideration of the child's biological inheritance, proceeds to a study of the principles of growth and development and the basic motivating forces, points out the significance of individual differences, and concludes with a description of development in infancy. Part II is concerned with the meaning of society and culture and their effect upon the development of personality, and Part III is devoted to the process of socialization. In Part III, there is a description of the American character from the anthropological point of view, and also contrasting descriptions of the psychoanalytic and "sociopsychologic" points of view in regard to personality and character development. Part IV takes up the family, the school, the peer groups, and the community (including the church and media of mass communication) as socializing agencies.

It is the reviewer's opinion that this work may well serve several groups as an introduction to the study of child development. It should prove valuable as a basic text for parent and teacher study groups. It should have a place on the reading list of students in elementary psychology, nurses, and pediatric resident staffs. The physician will find some of the biological discussions quite elementary, but a perusal of the book may help him to place his knowledge in proper perspective from the viewpoint of the child as a developing social being. It will provide him with useful concepts from other fields rather than with advice as to the management of behavior problems.

* * *

MULTIPLE MYELOMA. I. Snapper, M.D., Director of Medical Education, Cook County Hospital; Louis B. Turner, M.D., Research Assistant in Medicine, Mount Sinai Hospital, New York; and Howard L. Moscovitz, M.D., resident, Second Medical Service, Mount Sinai Hospital, New York. Grune & Stratton, New York, 1953. 168 pages, $6.75.

This fine monograph by Dr. Snapper and his associates is likely to be the standard reference work on multiple myeloma for many years to come. Although the subject is covered in a systematic and scholarly manner, the style is such that the material is interesting and readable. The book is primarily aimed at clinicians, and its subject matter is based largely upon almost one hundred patients treated by the authors. Illustrative case histories from these patients, as well as radiological, pathological, and metabolic data are frequently used to supplement the text. This happy combination of description and illustration conveys to the reader a first-hand familiarity with the subject not often found in medical texts.

Although the emphasis is primarily clinical, the metabolic aspects of multiple myeloma are not neglected. The sections on the renal lesion of myeloma, and effects on protein metabolism are especially noteworthy. Bence-Jones protein is discussed in some detail, and accurate methods for its identification are described. Together with an account of serum electrophoretic changes are simple clinical methods to demonstrate hyperglobulinemia.

The chapter on therapy reflects the current inadequacy of all available agents in the treatment of multiple myeloma. In the discussion of stilbamidine there is seen, perhaps, a wistful nostalgia for a drug introduced by the senior author. This is accompanied by a frank admission of its shortcomings, so that no harm is done.

The growing trend toward detailed monographs on a single disease is thoroughly justified if the calibre of this volume can be maintained.

THERAPEUTICS IN INTERNAL MEDICINE—2nd Edition. By 84 authors; edited by Franklin A. Kyser, M.D., F.A.C.P., Assistant Professor of Medicine, Northwestern University Medical School. Hoeber-Harper Book, Paul B. Hoeber, Inc., 49 East 33rd Street, New York 16, 1953. 85. pages, $15.00.

This is a good conventional reference book for therapeutics in internal medicine. It follows the routine outline of chapter presentation. It gives comparatively little space to general subjects. While it lacks any spectacular or unusual approach to lift it from the general run of books on therapy, it is written carefully and covers well the broad field of internal medicine.

The book could offer more variety in therapy, and if one is confronted with a difficult problem, it may prove inadequate. For example, take a woman with exfoliative dermatitis, whose disease is complicated by an advancing hepatorenal syndrome: contact dermatitis is mentioned but given short shrift as a skin disease; lower nephron nephrosis likewise is mentioned but the write-up is not helpful; nor are the two conditions correlated in any place.

Some of the sections, for instance those on the heart and hypertension (which are generally good) should give more exact dosage and specific preparations: on pages 476 and 477 the dosage of a mercurial diuretic is noted as 0.5 to 1 cc. intramuscularly daily, after which "the patient is then put on a maintenance dose which may be given every 1-2 weeks as indicated." There is such a variety of mercurial diuretics available that this advice becomes irresponsible and the author may as well counsel the reader to consult his local pharmacist or manufacturer's sales representative. It seems a better idea to give names and dosages of specific preparations with the trade names in parenthesis—as they are given elsewhere in the book.

Despite these defects, the solid character of this volume recommends it highly for the reference desk of the internist and other students of medical diseases.

* * *

PHYSICAL DIAGNOSIS. Harry Walker, M.D., F.A.C.P., Professor of Clinical Medicine, Medical College of Virginia, Richmond, Virginia. The C. V. Mosby Company, St. Louis, 1952. 461 pages, 126 illustrations, $8.00.

This is a volume of modest size produced under the joint authorship of several members of the Medical College of Virginia. It is divided into two sections, the first and larger of which deals with general physical examination. The second section is devoted to specific diseases of the respiratory and circulatory systems. The illustrations, although too few, are of good quality.

There is considerable variation in the quality of different contributions. While there is an excellent chapter on "Physical Diagnosis of the Female Pelvic Disease," the section on the abdomen is rather spotty. Apparently in an effort to conserve space, one finds summary statements such as the following (pages 191-192): "Liver enlargement occurs in fatty infiltration of the organ, chronic passive congestion, cystic disease and cirrhosis."..."A tender liver, manifested by pain on pressure, occurs in acute passive congestion, hepatic abscess and perihepatitis." There is no mention here of acute hepatitis, a condition considerably more common and therefore of greater import to the student beginning physical diagnosis. The fluid wave is described as a physical sign but there is no statement that it is more significant in the erect or sitting position.

The prime value of this book will be in the teaching of physical diagnosis to the second year students, and it will naturally find its greatest application at the Medical College of Virginia. Since it is incomplete and does not make an outstanding contribution, it is doubtful that California medical schools will substitute it for the texts now in use.

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1. HUFFORD, A. R.: MICH. STATE MED. SOC. 49:1308, 1950.

2. MCHARDY, G. AND BROWNE, D.: SOU. MED. J. 45:1139, 1952.

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Preliminary Tests Prove New Antiemetic Drug Effective

Nausea and vomiting caused by a wide variety of clinical conditions and by use of numerous drugs have been suppressed or controlled through administration of a new drug, known only as compound 2601-A, it was reported in a recent issue of the *Journal of the American Medical Association.*

This new antiemetic drug, synthesized chlorinated phenothiazine, has been used on 70 patients "with gratifying results," even where other antiemetic drugs have failed, according to Drs. Dale G. Friend and James F. Cummins, Boston.

"Without doubt, compound 2601-A has a powerful selective effect against nausea and vomiting, and is effective whether given orally or intramuscularly," the doctors stated.

Preliminary tests have shown the compound to be effective in suppressing nausea and vomiting caused by such clinical conditions as cancer, inflammation of the inner ear, tumors of the lymphoid tissues, and uremia, they said. It also was found effective in preventing or controlling the nausea and vomiting caused by antabuse administration to patients under the influence of alcohol, and that produced by aureomycin, folic acid antagonist, codeine, meperidine, methadone, morphine, nitrogen mustard, protoveratrine, terramycin, and urethane therapy.

"Nausea and vomiting ceased usually within one hour after injection or oral administration of compound 2601-A," the doctors stated. "Often patients who had been unable to take anything by mouth for days were able to eat their next meal."

A series of 35 patients who were under the influence of alcohol were given a combination of antabuse and compound 2601-A. No nausea or vomiting developed and the patients rapidly recovered from the alcoholic state with a minimum of undesirable residual effects, the doctors said, adding:

"Often they promptly went to sleep and awakened sober and relaxed. They were able to return to their employment much more promptly than was possible after use of any of the other well-recognized methods of relieving alcoholism. In a few patients who had nausea and vomiting from the antabuse-alcohol reaction, compound 2601-A promptly suppressed the nausea and vomiting."

According to the doctors, the only side-effects observed to the drug were dryness of mouth, occasional mild sedation, and a rare, mild transient attack of faintness, palpitation and flushing of the face.

Use of compound 2601-A is still in the experimental stages. The drug is not available for general consumption.

Dr. Friend is senior associate in medicine at the Peter Bent Brigham Hospital, and associate in medicine at Harvard Medical School. Dr. Cummins is assistant in medicine at the hospital, and a research fellow in medicine at Harvard Medical School.

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Cantor[1] concludes—after studying 400 patients, equally apportioned between mineral oil and refined psyllium therapy —that L.A. Formula accelerates healing as much as 2 to 4 weeks compared with patients taking mineral oil for the management of postoperative constipation following anorectal surgery. This is due, he states, to the clean wound area which L.A. Formula leaves for the better development of granulation tissue.

Cantor notes these additional advantages of L.A. Formula therapy. L.A. Formula provides an internal dilator action which acts to prevent adhesions, stricture and stenosis. Patients find L.A. Formula palatable and easy to take and do not become habituated to its use. Its laxative action is dependable.

He concludes that L.A. Formula "provides a natural, unabsorbable bulk and lubricant with no clinical disadvantages. It offers many advantages over mineral oil and has none of mineral oil's disadvantages." *Burton, Parsons & Company, Washington 9, D. C.*

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1. Cantor, A. J., Am. J. Proctol. 3:204-210, (Sept.) 1952.

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BOOKS RECEIVED

ADVANCES IN PEDIATRICS—Volume VI. Editor, S. Z. Levine, Cornell University Medical College. The Year Book Publishers, Inc., 200 East Illinois St., Chicago, Ill., 1953. 323 pages, $7.50.

ANTIBIOTICS—2nd Edition. Robertson Pratt, Ph.D., Professor of Pharmacognosy and Plant Physiology, and Jean Dufrenoy, D.Sci. (Paris), Research Associate in Antibiotics, both from the University of California College of Pharmacy. J. B. Lippincott Company, Philadelphia, 1953. 398 pages, $7.50.

ATLAS OF REGIONAL DERMATOLOGY. Ernest K. Stratton, Ph.D., M.D., Research Associate, the George Williams Hooper Foundation for Medical Research, University of California, and Harry L. Arnold, Jr., M.D., Maurice J. Costell, M.D., Lewis A. Koplik, M.D., and Paul Fasal, M.D. Charles C. Thomas, Publisher, Springfield, 1953. 274 pages, $15.00.

BAILEY'S TEXTBOOK OF HISTOLOGY — 13th Edition. Revised by Philip E. Smith, Ph.D., Sc.D., Professor Emeritus of Anatomy, College of Physicians, Columbia University; and Wilfred M. Copenhaver, Ph.D., Professor of Anatomy, College of Physicians and Surgeons, Columbia University. The Williams and Wilkins Company, Baltimore, 1953. 775 pages, $9.00.

CLINICAL MANAGEMENT OF BEHAVIOR DISORDERS IN CHILDREN. Harry Bakwin, M.D., Professor of Clinical Pediatrics, and Ruth Morris Bakwin, M.D., Associate Professor of Clinical Pediatrics, both of New York University. W. B. Saunders Company, Philadelphia, 1953. 495 pages, 14 figures, $10.00.

DISABILITY EVALUATION—Principles of Treatment of Compensable Injuries—5th Edition. Earl D. McBride, B.S., M.D., F.A.C.S., Assistant Professor in Orthopedic Surgery, University of Oklahoma School of Medicine. J. B. Lippincott Company, Philadelphia, 1953. 715 pages, $15.00.

GUIDE TO HUMAN PARASITOLOGY, A—For Medical Practitioners—5th Edition. D. B. Blacklock, C.M.G., M.D. (Edin.), D.P.H. (Lond.), D.T.M. (Liver.), and T. Southwell, D.Sc., Ph.D., A.R.C.Sc., F.Z.S., F.R.S.E. The Williams and Wilkins Company, Baltimore, 1953. 228 pages. $5.50.

GUIDE TO MEDICAL AND DENTAL PHOTOGRAPHY, A. Kenneth S. Tydings, S.P.E. Greenberg, Publisher, 201 East 57th Street, New York 22. 124 pages, $1.95.

HEART BEAT, THE—Graphic Methods in the Study of the Cardiac Patient. Aldo A. Luisada, M.D., Associate Professor of Medicine, Director, Division of Cardiology, Chicago Medical School. Paul B. Hoeber, Inc., 49 E. 33rd St., New York, 1953. 527 pages, 311 illustrations, $12.00.

HISTORY OF PSYCHOANALYSIS IN AMERICA, A. C. P. Oberndorf, M.D., Clinical Professor of Psychiatry, Columbia University. Grune and Stratton, New York, 1953. 280 pages, $5.00.

HUMAN EMBRYOLOGY—2nd Edition. Bradley M. Patten, Professor of Anatomy, University of Michigan Medical School. The Blakiston Company, Inc., New York, 1953. 798 pages, 453 illustrations and 2 plates, $12.00.

LAWLESS YOUTH—A Psychiatric Study of the Causes and Prevention of Adolescent Crime. E. A. Stephens, M.D., former Medical Director, Territorial Hospital for Nervous and Mental Diseases, Kahohe, T. H. Pageant Press, 130 West 42nd Street, New York, 1953. 315 pages, $3.50.

LIVING WITH A DISABILITY. Howard A. Rusk, M.D., and Eugene J. Taylor. The Institute of Physical Medicine and Rehabilitation, New York University-Bellevue Medical Center. The Blakiston Company, Inc., Garden City, New York, 1953. 207 pages, $3.50.

MANAGEMENT OF PAIN, THE—With Special Emphasis on the Use of Analgesic Block in Diagnosis, Prognosis, and Therapy. John J. Bonica, M.D., Director, Department of Anesthesia, Tacoma General and Pierce County Hospitals; Clinical Associate, Department of Anatomy, University of Washington Medical School. Lea & Febiger, Philadelphia, 1953. 1,533 pages, 785 illustrations on 444 figures and 52 tables, $20.00.

MANAGING YOUR CORONARY. William A. Brams, M.D. J. B. Lippincott Company, Philadelphia, 1953. 158 pages, $2.95.

MANIC-DEPRESSIVE DISEASE — Clinical and Psychiatric Significance. John D. Campbell, M.D., Diplomate, American Board of Psychiatry and Neurology. J. B. Lippincott Company, Philadelphia, 1953. 403 pages, $6.75.

MANUAL OF MEDICAL EMERGENCIES—2nd Edition. Stuart C. Cullen, M.D., Professor of Surgery; Chairman, Division of Anesthesiology, and E. G. Gross, M.D., Professor and Head of Department of Pharmacology, both from State University of Iowa College of Medicine. The Year Book Publishers, Inc., Chicago, 1953. 278 pages, $4.50.

MAY'S MANUAL OF THE DISEASES OF THE EYE—For Students and General Practitioners — 21st Edition. Revised and Edited by Charles A. Perera, M.D., Associate Clinical Professor of the College of Physicians and Surgeons, Columbia University, New York. Williams and Wilkins Company, Baltimore, 1953. 512 pages, 379 illustrations, 32 plates and 93 colored figures, $6.00.

MODERN CLINICAL PSYCHIATRY—4th Edition. Arthur P. Noyes, M.D., Superintendent, Norristown State Hospital, Associate Professor of Psychiatry, Graduate School of Medicine, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1953. 609 pages, $7.00.

NURSING MOTHER, THE — A Guide to Successful Breast Feeding. Frank Howard Richardson, M.D. Prentice-Hall, Inc., New York. 204 pages, $2.95.

PRIMER OF CARDIOLOGY, A—2nd Edition. George E. Burch, M.D., F.A.C.P., Henderson Professor of Medicine, Tulane University School of Medicine. Lea & Febiger, Philadelphia, 1953. 339 pages, 214 illustrations, $5.50.

PROGRESS IN NEUROLOGY AND PSYCHIATRY—Volume VIII. Edited by E. A. Spiegel, M.D., Professor and Head of the Department of Experimental Neurology, Temple University School of Medicine, Philadelphia. Grune & Stratton, New York, 1953. 591 pages, $10.00.

RADIOLOGY OF BONES AND JOINTS, THE—An Introduction to the Study of Tumours and Other Diseases of Bone — 5th Edition. James F. Brailsford, M.D., Ph.D., F.R.C.P., F.I.C.S. (Hon.), Hunterian Professor, Royal College of Surgeons, 1934-5, 1943-4; Founder and First President of the British Association of Radiologists. The Williams and Wilkins Company, Baltimore, 1953. 875 pages, over 725 illustrations, $19.00.

REHABILITATION OF THE OLDER WORKER. Edited by Wilma Donahue, James Rae, Jr., and Roger B. Berry. University of Michigan Press, Ann Arbor, 1953. 200 pages, $3.25.

SURGERY OF THE BILIARY TRACT, PANCREAS AND SPLEEN. Charles B. Puestow, M.D., Ph.D. (Surg.), Clinical Professor of Surgery, College of Medicine, University of Illinois. The Year Book Publishers, Inc., Chicago, 1953. 370 pages, $9.00.

SYNOPSIS OF PEDIATRICS—Sixth Edition. John Zahorsky, A.B., M.D., F.A.A.P., Professor Emeritus of Pediatrics, St. Louis University School of Medicine; assisted by T. S. Zahorsky, B.S., M.D., Senior Instructor in Pediatrics, St. Louis University School of Medicine. C. V. Mosby Company, St. Louis, 1953. 470 pages, 158 illustrations and 9 color plates, $6.00.

TEXTBOOK OF MEDICAL TREATMENT—6th Edition. By various authors. Edited by D. M. Dunlop, B.A.(Oxon.), M.D., F.R.C.P.(Edin.), F.R.C.P.(Lond.), Professor of Therapeutics and Clinical Medicine, University of Edinburgh; L. S. P. Davidson, B.A.(Camb.), M.D., F.R.C.P.(Edin.), F.R.C.P.(Lond.), M.D.(Oslo), Professor of Medicine and Clinical Medicine, University of Edinburgh, Physician, H.M. The Queen in Scotland; and Sir John McNee, D.S.O., M.D., D.Sc. (Glas.), F.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.F.P.S., Physician, H.M. The Queen in Scotland; Regius Professor of Practice of Medicine, University of Glasgow. E. & S. Livingstone Ltd., Edinburgh, 1953, through Williams and Wilkins, Baltimore. 1023 pages, $9.50.

TEXTBOOK OF PATHOLOGY, A—An Introduction to Medicine—6th Edition. William Boyd., M.D., Dipl. Psych., M.R.C.P. (Edin.), F.R.C.P. (Lond.), F.R.C.S.(C.), LL.D. (Sask.), D.Sc. (Man.), M.D. (Oslo), F.R.S.(C.), Professor of Pathology, University of British Columbia. Lea & Febiger, Philadelphia, 1953. 1024 pages, 570 illustrations and 32 color plates, $12.50.

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A.M.A. Witnesses Testify on Disease Control at House Hearings

Dr. Edward J. McCormick, president of the American Medical Association, informed the House Interstate and Foreign Commerce Committee at its recent hearings on disease and health insurance that the A.M.A. spent over 80 per cent of its $10 million budget for 1952 on scientific activities. The remainder was spent in the socio-economic field of medicine, which includes ethics, laws and legislation, medical service, economic research, rural health, and health education. Dr. McCormick had high praise for the various A.M.A. councils, committees and bureaus, declaring that "all of their work is extremely important in advancing the science of medicine."

Dr. McCormick said it was his personal opinion that there would be a definite preventive for poliomyelitis soon and that great strides would be made in the next ten or fifteen years in solving other major diseases.

Dr. Paul Wermer, secretary of the Committee on Research of the Council on Pharmacy and Chemistry, said that the A.M.A. for over half a century has shown "bold leadership" in opposing "those who seek commercial gains by foisting false hopes and cures on the cancer patient and his family." He said the A.M.A. through its Bureau of Investigation has cooperated closely with the various federal and state agencies charged with enforcing the drug laws and with state licensing agencies. Dr. Wermer commented: "In turning the searchlight of truth upon these cancer quacks we have frequently become the defendant in a court of law. Thus, the Association has been obliged to spend large sums of money in the defense of such legal actions. It is significant, however, to note that although we have been sued for more than $40 million over the years, we have been obliged to pay but one judgment and that in the nominal sum of one penny."

T. Duckett Jones, medical director of the Helen Hay Whitney Foundation, said funds were inadequate for research in rheumatic fever, and Dr. Irving S. Wright, president of the American Heart Association, cited an appropriation cut in the National Heart Institute's budget for travel to scientific meetings.

—The A.M.A. Secretary's Letter

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40 MINUTES FROM LOS ANGELES

Public Realization of Coroner's Office Welfare Role Important

The general public must be educated to realize the important role a well-functioning medical coroner's office plays in their welfare, it was stated in a recent issue of the *Journal of the American Medical Association.*

Cooperation of the public with the local coroner's office will provide many benefits to the entire community, in the opinion of Drs. Kurt E. Landé and Garrett Bonne, Hamilton, Ohio. These benefits include the discovery of the major causes of death, the detection of epidemics, the uncovering or disproof of homicides and the determination of causes of accidents which result in death.

The doctors reported on a survey of the activities of the coroner's office in an Ohio county with a population of 147,203. In the county during 1951 there were 1,405 deaths, and 1,440 in 1952. The coroner's office investigated 305 of the deaths in 1951 and 334 in 1952.

"The preponderance of coroner's cases were sudden deaths from natural causes," the doctors stated. "This is also the group in which the largest number of autopsies were performed; this incidence is similar to that of the whole country. Heart disease, mainly the direct or indirect sequela of coronary arteriosclerosis, is by far the leading cause of sudden, unexpected death.

"Accidents are the next most important group of coroner's cases, with automobile accidents the commonest. Railroad accidents, however, are, in this country, far from rare and are frequently the result of unprotected railroad crossings at which drivers or pedestrians either half asleep and/or intoxicated are caught by a train. Industrial accidents are encountered in the usual frequency, in spite of existing safety programs in the steel and paper mills, machine tool factories, and foundries.

"Although true homicides have been infrequent, suicides are fairly common; among them have been several homicide-suicide situations. Too many sleeping pills, gunshot wounds, and carbon monoxide are employed more often than hanging."

Why, Doctor?

A thirty-minute "live" show featuring timely discussions by local medical doctors on health and medical topics

8:00 O'CLOCK, KGO-TV, CHANNEL 7, SAN FRANCISCO, *EVERY OTHER SUNDAY EVENING*

A public service feature of KGO-TV in cooperation with

CALIFORNIA MEDICAL ASSOCIATION
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LIVERMORE SANITARIUM



• The Hydropathic Department devoted to the treatment of general diseases, excluding surgical and acute infectious cases. Special attention given functional and organic nervous diseases. A well equipped clinical laboratory and modern X-ray Department are in use for diagnosis.

• The Cottage Department (for mental patients) has its own facilities for hydropathic and other treatments. It consists of small cottages with homelike surroundings, permitting the segregation of patients in accordance with the type of psychosis. Also bungalows for individual patients, offering the highest class of accommodations with privacy and comfort.

GENERAL FEATURES

1. Climatic advantages not excelled in United States. Beautiful grounds and attractive surrounding country.
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SPECIAL ANNOUNCEMENT
TO PHYSICIANS OF SOUTHERN CALIFORNIA

As Part of its Program of Post-graduate Medical Education,
The California Academy of General Practice in Conjunction with
Lederle Laboratories Will Present

A SYMPOSIUM ON ACUTE INFECTIOUS DISEASES

Hotel Del Coronado, Coronado, California
Wednesday, December 9, 1953

Medical Sessions—10:00 a.m. to 12:20 p.m.
2:00 p.m. to 5:00 p.m.

Seven eminent medical authorities will deliver
lectures on various disease problems
of importance in Southern California

Luncheon will be served during the noon recess,
and there will be no registration fee for this meeting

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cortisone
for inflammation,
neomycin
for infection:

Each gram contains:
Cortisone Acetate 15 mg.
Neomycin Sulfate 5 mg.
(equivalent to 3.5 mg. neomycin base)

Available in 1 drachm tubes with applicator tip

The Upjohn Company, Kalamazoo, Michigan



Neosone
Trademark
OPHTHALMIC OINTMENT

CLASSIFIED ADVERTISING

(Continued from Page 72)

REAL ESTATE FOR SALE

YOUR SOUNDEST INVESTMENT IS IN CALIFORNIA LAND. Nevada County is the place; noted for cattle, timber, fishing, hunting, and its fine climate. Becoming a leader in livestock production, land at near prewar prices, lots of water, low taxes, good highways. Large and small acreage. Write for our free brochure. Bert Burns & Company, Grass Valley, California. Telephone 792.

OFFICES FOR RENT OR LEASE

OFFICE SPACE available for general practitioner in town of 16,000 in Southern California, on lease. Must not be vulnerable for military service. Box 90,365, California Medicine.

OFFICE SPACE TO RENT in Lakeside district of San Francisco for general practitioner or specialist. Good parking and transportation facilities. Will remodel office to suit. Reasonable rent. Telephone DElaware 4-0846 or write Box 90,405, California Medicine.

APPARATUS FOR SALE

McCARTHY PANENDOSCOPE, BUERGER UNIVERSAL URETHROSCOPE, and several other used cystoscopes in excellent condition at one-half list price. Box 90,400, California Medicine.

TECHNICAL AIDES

WANTED—LAB TECHNICIAN who can do x-ray. Private office, 40-hour week. Located in the central valley of California. Population 20,000. Good living and recreational facilities. Salary range $300 to $350 per month. Box 90,390, Clifornia Medicine.

U. S. Reduces OVR Payments and Improves Budget Control

Federal contributions to states for vocational rehabilitation programs will be put under closer budgetary control and gradually reduced under a new system set up by the Department of Health, Education, and Welfare. The new plan was instituted as a result of a rider to DHEW's appropriations bill, inserted by Congress at the request of the Budget Bureau.

Until now, vocational rehabilitation grants to states have fluctuated, with the federal government committed to match dollar-for-dollar money spent by the states for administration and 50 per cent of the cost of physical restorations, training and patient transportation.

Because there was no definite ceiling for each state, the federal Office of Vocational Rehabilitation frequently had to dip into a current appropriation to meet its share of a state's costs for previous years. Effective for this year, OVR allocates to each state a set sum of money, based on the overall appropriation, this year of about $23 million. For the current fiscal year, the allocation to each state will be 92.5 per cent of the U. S. share for fiscal 1953. However, if the state wants to match the lower federal allocation and then spend more money, the federal government will pay one fifth of the additional costs, within limits set by OVR.

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Suppliers of professional requirements . . . meet the standards of California Medicine

- SEVERAL TIMES a month the Committee on Advertising meets to consider material submitted for these pages.
- Every product accepted for advertising has been reviewed by members of the committee or their consultants.
- The reliability of experiments and clinical trials reported in advertisements is verified.
- Formulas are required for all pharmaceuticals.

Conforming to such criteria—

Advertisers in CALIFORNIA MEDICINE believe their messages merit your attention

Haven for the Hypertensive



Conservative living – avoiding unnecessary emotional as well as physical stress, providing real relaxation – and conservative medication are essential parts of the effective management of arterial hypertension.

Theominal – time-tested vasodilator and sedative – is helpful to many thousands of hypertensives. Continuous administration of Theominal often holds the blood pressure at a nearly normal level, relieving the congestive headache, chest pains and vertigo which frequently accompany hypertension.

WINTHROP

THEOMINAL®

(Theobromine 5 grains, Luminal ½ grain)

Vasodilator and Sedative for

ARTERIAL HYPERTENSION

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When less sedation is required:

new THEOMINAL (M)

(Theobromine 5 grains, Luminal ¼ grain)

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A SAFETY FACTOR

TO ORAL ANTIBIOTIC THERAPY

Following oral antibiotic therapy, the normal bacteria of the intestinal tract are destroyed in whole or in part. Certain anorectal complications result which can be controlled by the use of active acidophilus cultures. Physicians prescribing

SOYADOPHILUS

have found it easy to implant a beneficial saccharolytic flora of viable and vigorous L. acidophilus.

8-OZ. BOTTLES AT YOUR PHARMACY

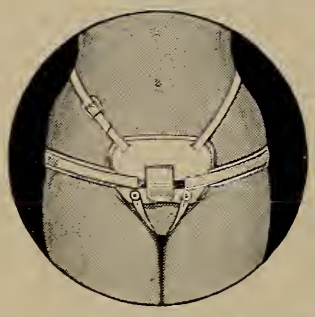
or "Factory-Fresh" by Mail. 4-oz. bottles—sent twice weekly on our monthly service basis.

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The Hittenberger Ptosis Spring and Pad



The lightweight unique appliance embodies all of the essential elements contained in the Hittenberger patented Ptosis Supporter and permits the patient to wear any corset or girdle over same. Our staff of expert fitters is highly trained to take care of every detail of ptosis supporter fitting and patients are thoroughly trained in proper methods of wearing and applying them.

•

HITTENBERGER'S

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Only Scientifically-Based Reducing Diets Are Safe

Are reducing diets safe?

Yes, they are safe and effective if they are based on sound, scientific medical knowledge and are prescribed by a physician to meet the individual's needs.

"All other diets should be viewed with suspicion; in fact, they should be completely avoided," Dr. Max Millman, Springfield, Mass., wrote in *Today's Health* magazine, published by the American Medical Association. "Not only are they totally ineffective in the long run, but they are, as a rule, harmful to health and nutrition.

"Dieting today is the most important and most valuable method in the treatment of obesity. Drugs, exercise and psychotherapy may lend a helping hand but, unless food intake is properly restricted along with them, the results will be either negligible or nought.

"Ready-made diets advocate the same food and the same number of calories for all would-be reducers. This is a mistake. A diet is a prescription which, instead of drugs and chemicals, calls for definite amounts of specific foods. Therefore, it has to be individualized. Our nutritional needs vary greatly in accordance with many factors, including size, age, sex and occupation. The degree of obesity and the desirable rate of weight loss also have to be seriously considered."

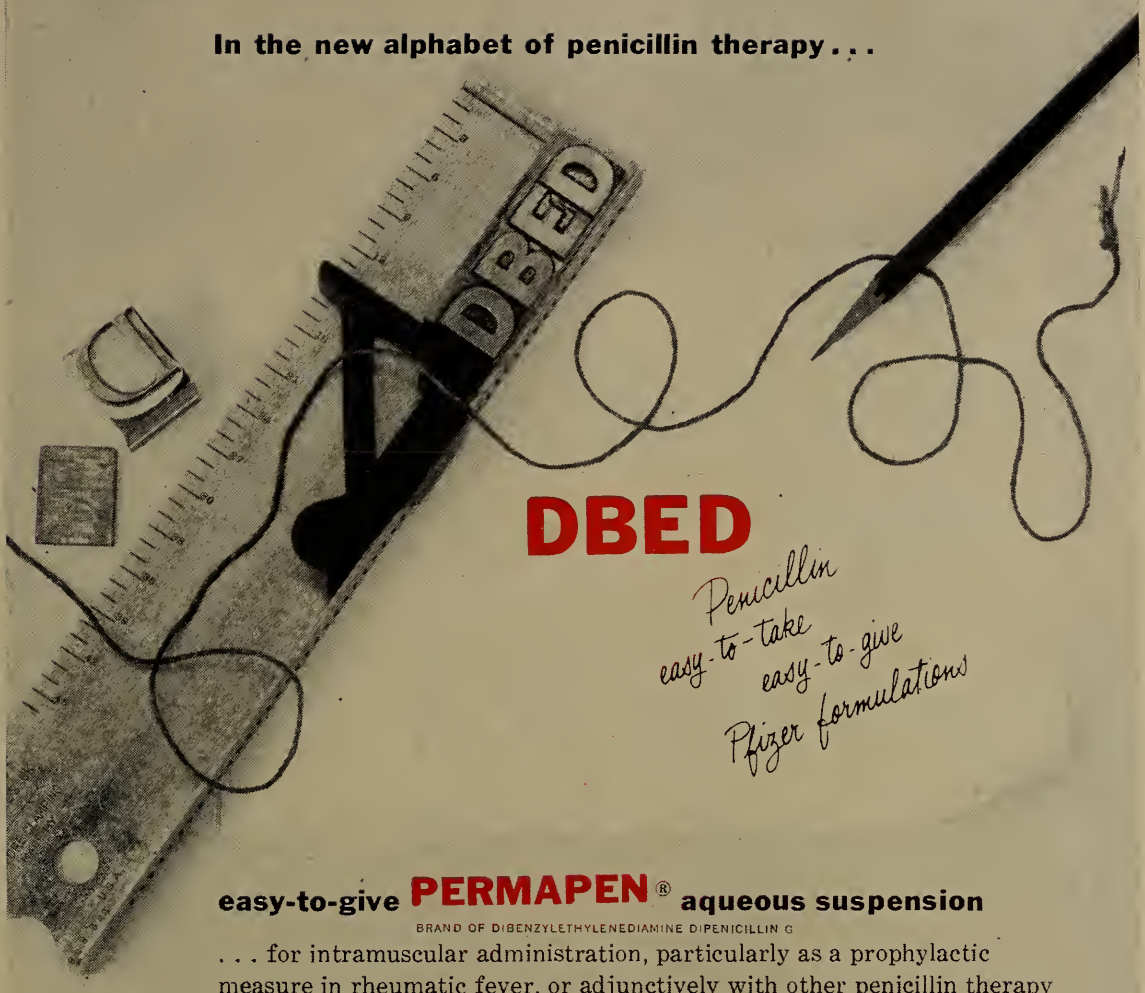
Too slow a weight loss is discouraging, but to reduce too rapidly is even worse—it is dangerous—Dr. Millman pointed out. A reducing program should extend over many weeks or months, as the weekly weight loss should not be more than one or two pounds. This will serve to safeguard health and to ensure permanent results. It will prevent the haggard look and the wrinkled skin so frequently encountered with the starvation reducing diet.

Get-thin-quick diets, starvation or semistarvation diets, and one-food or two-food diets are not only ineffective in the long run, but they also deprive the body of essential minerals, vitamins and proteins, and decrease the body's resistance to disease and infection, he added. All diets daily should contain items from each of the basic seven groups of food: green and yellow vegetables; oranges, tomatoes, grapefruit; potatoes and other vegetables and fruits; milk and milk products; meat, poultry, fish or eggs; bread, flour and cereals; butter and fortified margarine. When a diet consists of less than 1,200 calories per day, supplemental vitamins and minerals in capsule form should be taken.

According to Dr. Millman, the construction of a sound reducing diet is possible only by observing several well-founded nutritional rules and regulations:

(Continued on Page 108)

In the new alphabet of penicillin therapy . . .



DBED

Penicillin
easy-to-take
easy-to-give
Pfizer formulations

easy-to-give PERMAPEN® aqueous suspension

BRAND OF DIBENZYLETHYLENEDIAMINE DIPENICILLIN G

. . . for intramuscular administration, particularly as a prophylactic measure in rheumatic fever, or adjunctively with other penicillin therapy of sensitive infections. Levels lasting as long as 14 days from one injection. Supplied in single-dose STERAJECT® disposable cartridges containing 600,000 units of DBED penicillin each with sterile foil-wrapped needle. For use with your Pfizer Steraject syringe.

PERMAPEN® FORTIFIED

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aqueous suspension

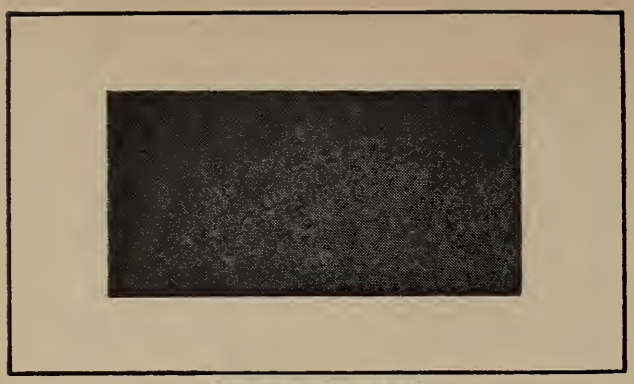
. . . multiplies therapeutic benefits with the combined higher blood levels of 300,000 units procaine penicillin and the sustained blood levels of 300,000 units DBED penicillin. Supplied in single-dose disposable STERAJECT cartridges each with sterile foil-wrapped needle.

easy-to-take PERMAPEN® oral suspension

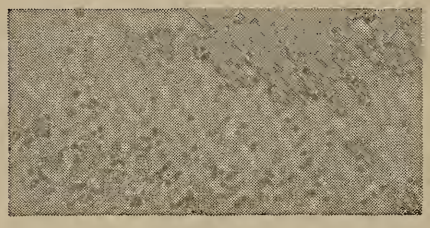
BRAND OF DIBENZYLETHYLENEDIAMINE DIPENICILLIN G

. . . particularly for the treatment of uncomplicated infections due to pneumococci, streptococci, staphylococci and gonococcus as well as other penicillin-sensitive organisms. Supplied in 2 oz. bottles providing 300,000 units DBED penicillin in each peach-flavored teaspoonful.

Pfizer PFIZER LABORATORIES, BROOKLYN 6, N. Y., DIVISION, CHAS. PFIZER & CO., INC.



BENOQUIN



BENOQUIN

(BRAND OF MONOBENZONE)

FOR THE TREATMENT OF MELANIN HYPERPIGMENTATION

Ointment BENOQUIN is a new preparation for the treatment of disorders of hyperpigmentation resulting from an increased amount of melanin in the skin. It inhibits melanin formation in human skin. Depigmentation is usually observed after one to four months of continuous treatment . . . generally after the first month.

If erythema or dematitis develops, discontinue the medication. The medication is not effective in hyperpigmentation resulting from pigments other than melanin.

P. B. ELDER CO., Bryan, Ohio

Hope for Effective Life for Brodie Twin

The most coveted of all birthday presents—the prospect of a happy, effective life—has been given to a two-year-old boy by four Chicago physicians.

The recipient was Rodney Dee Brodie. The donors were Drs. Herbert J. Grossman, Oscar Sugar, Paul W. Greeley and Max S. Sadove.

Rodney Dee, who celebrated his second birthday September 16, probably will be able "to grow and develop as a happy, effective human being" despite his handicap, the doctors announced in a recent issue of the *Journal of the American Medical Association.*

They presented the first official report on the separation of Rodney Dee from his Siamese twin, Roger Lee, to whom he was connected at the top of the head. The final separation was accomplished on December 17, 1952. Roger Lee died on January 20, 1953.

Today, the doctors reported, Rodney Dee is 34 inches in height and weighs 24 pounds. He is making definite progress and is continually improving.

"Rodney Dee can now sit alone, but cannot pull himself into a sitting position," the doctors stated. "He has good control of his head and good coordination of all extremities, and his jargon has increased in amount and in intelligibility. He is alert, responds to favored personnel, and makes attempts to feed himself.

"The hip flexors (which were tight, presumably owing to lack of standing) have become normal with physical therapy. It is difficult to assess the degree of development in all spheres because of the many factors, biological, traumatic and psychological, that have affected his present state.

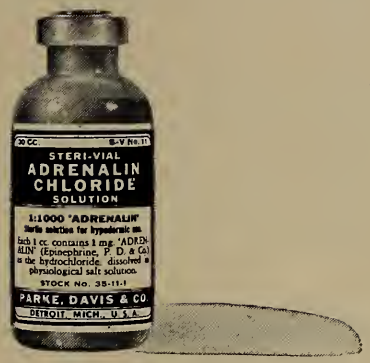
"There is still no solid protection for the brain, and the solution of this problem is now under active consideration. We are reluctant to use any foreign material over such a large surface of dura mater and under skin flaps, because of the hazards accompanying buried foreign bodies. Autogenous bone grafts appear to offer the best replacement for the calvarium that never developed, but the extensiveness of the defect makes accomplishment of closure by this means difficult.

"All the professional and technical skills have basically one objective—to permit this baby to grow and develop as a happy, effective human being. His handicap—like other handicaps—need not prevent him from fulfilling this goal.

"It has been necessary throughout, therefore, to provide for him as well as his family an understanding and comfortable environment. Without such an environment—and without the help of his parents and our help to them in understanding his problems—the boy's development might not have proceeded so well.

"The future planning must involve most careful

(Continued on Page 102)



. . ADRENALIN®



Introduced to the medical profession by the Parke-Davis Research Laboratories in 1901, ADRENALIN (epinephrine, Parke-Davis) is one of the best known and most widely used of all drugs. Its value and versatility are indicated by its wide application—

In Medicine, ADRENALIN is a standby for relieving asthmatic paroxysms. It is a specific in Adams-Stokes syndrome, and is of great value for protein shock, nitritoid crises, serum sickness, urticaria, angioneurotic edema, and other allergic reactions.

In Surgery, ADRENALIN is employed to prolong local anesthesia by delaying absorption of the anesthetic agent, and to control hemorrhage.

In Obstetrics, ADRENALIN is used as a uterine relaxant.

In Anesthesiology, ADRENALIN is used to overcome cardiac arrest.

In Ophthalmology, ADRENALIN reduces intraocular pressure, vascular congestion, and conjunctival edema.

In Otolaryngology, ADRENALIN controls hemorrhage and provides prompt decongestion.

MEDICAMENTA VERA · PD & CO.

Parke, Davis & Company
DETROIT, MICHIGAN

Hope for Effective Life for Brodie Twin

(Continued from Page 94)

attention to his emotional and social development. This will consist of his parents' greater and greater participation in his care as his physical problems permit, continued medical and surgical efforts to correct his physical difficulties with as little pain and discomfort as possible, and long-term planning to assure stimulating educational opportunities that are compatible with his capacities.

"These provisions, associated with increasing understanding of all handicapped children by the public, will provide the best assurance that this boy will have the opportunities that should come to all children—that of the fulfillment of his greatest potentialities as a human being."

In the report, the doctors gave a brief resume of the preoperative, operative, and postoperative periods in the babies' lives. They told how the children, who were placed in the University of Illinois Hospitals when they were a month old, were given numerous preoperative tests to determine the feasibility of separation. They described several of the preliminary surgical procedures that were necessary.

The report outlined the first attempt at separation, and how it became necessary to postpone final separation because of the length of time, six and a quarter hours, consumed in exploratory procedures. Final separation, which took more than 12 hours and during which time the children went into shock, also was described.

Efforts put forward to save the life of Roger Lee, who never regained consciousness following the operation, were reported as were those expended during the convalescence of Rodney Dee.

The doctors are associated with the University of Illinois College of Medicine.

Support the Bricker Constitutional Amendment on Treaties

Support of the Bricker constitutional amendment, which stipulates that no treaty that violates the Constitution of the United States shall be valid, was urged editorially in a recent issue of the *Journal of the American Medical Association.*

The resolution, introduced in the 83rd Congress by Senator John W. Bricker (R., O.) and 63 cosponsors, recommends that a constitutional amendment be adopted protecting the states and the people from abuse of treaty-making authority.

"The amendment establishes by unequivocal language that the treaty power cannot be used for purposes in conflict with the Constitution," the editorial stated. "It also provides that a treaty shall become effective as internal law in the United States only through the enactment of domestic legislation that could have been adopted in the absence of a treaty."

The amendment will not affect the present method of negotiating and ratifying treaties, the editorial pointed out, adding:

"Treaties will continue to be negotiated by the President and ratified with the advice and consent of two-thirds of the senators present and voting. The amendment will not prevent the President and the Senate from concluding a treaty otherwise valid under the Constitution on any subject whatsoever, nor will it affect in any manner treaties that do not make internal law in the United States.

"It will, however, make impossible the participation of any foreign nation by treaty method in the adoption of laws for the regulation of the conduct of the citizens of the United States. It will prevent the reduction of state power and the enhancement of federal power at the expense of the states through the ratification of a treaty.

"The balance of power between the states and the federal government will be subject to change only by the regular processes of constitutional amendment or judicial interpretation. The resolution will not render acts of Congress unconstitutional that have been adopted under a treaty concluded prior to the ratification of the proposed constitutional amendment; however, legislation enacted after the adoption of the amendment, in implementation of a treaty, will be subject to the provisions of the amendment irrespective of whether the treaty antedates the amendment.

"When ratifying a treaty, it will be necessary, under this proposal, for the Senate to make a determination as to whether anything in the fine print adversely affects domestic law and then include a reservation that such provision shall not become effective until implemented by legislation.

"Modern treaties are long and involved. Senators often do not have time to read and consider carefully provisions that may have been put into them affecting domestic law. In no other major country in the world is a treaty self-executing. In every other major country treaties require implementation by enactment of domestic legislation. It should not be left to the discretion of the Senate whether the House of Representative shall be allowed to participate in making domestic law within the United States. This participation should be mandatory."

A Report on the Double-Filtering Action of King-Size, Filter-Tip VICEROY

VICEROY Now Combines the Advantages of Both King-Size and Filter-Tip Cigarettes

Now for the first time, smokers can have the advantages of the double-filtering action of king-size and filter tip.

The New Viceroy Cigarette is king-size—21% longer than ordinary cigarettes. As smoke passes through, this extra length helps filter out nicotine and tars.

The New Viceroy Filter—18% longer than any other—efficiently traps additional nicotine and tars. This unique new-type filter is scientifically designed to remove maximum quantities of nicotine and tars without impeding the flow of smoke or impairing flavor.

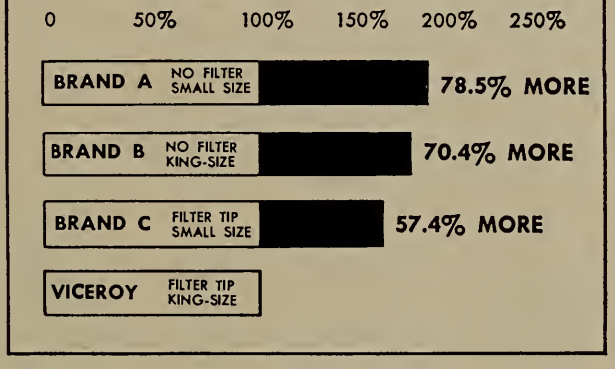
When a filter-tip cigarette is desired, VICEROY'S double-filtering action can be counted upon for a significant reduction in nicotine and tars. At the same time, however, the comforts of full smoking satisfaction can still be enjoyed.

Brown & Williamson Tobacco Corp.

VICEROY GIVES SMOKERS LESS NICOTINE AND TARS THAN ANY OTHER LEADING CIGARETTE

As Proved by Testing Methods Acceptable to the United States Government

A Quantitative Comparison of Nicotine and Tars Measured in the Smoke of Leading Cigarette Brands



Source: Comparative smoking tests of the leading selling brand in each category: small size, king-size and filter tip.
(Note: As VICEROY is by far the leading selling filter-tip cigarette, the second-place filter-tip brand was used for comparison.)





The VICEROY Filter

This new-type cellulose-acetate filter, exclusive with VICEROY Cigarettes, represents the latest development in 20 years of Brown & Williamson filter research. A completely new type of construction permits maximum filtering action; yet smoke is drawn through easily, and flavor is not affected.

★



Only a penny or two more than brands without filters.

Only Scientifically-Based Reducing Diets Are Safe

(Continued from Page 90)

1. The diet must be low in calories, as obesity is caused by an intake of food greater than the energy used. In reducing, the process has to be reversed.

2. The diet must be low in fat. The most fattening of all foods are not sugar and sweets, but fats and oils. Fats must not be excluded completely from the diet, but their intake modified.

3. The diet must be moderately low in starches or sugars. As they supply energy or fuel to the body, they must not be totally eliminated, but their intake restricted.

4. The diet must be fairly high in protein, as proteins build and repair tissues. This means the reducer should eat more lean meat, fish and fowl, shellfish, cottage cheese and soybeans than usual.

5. The diet must be adequate in water, minerals and vitamins.

6. The diet must be ample in bulk to appease the appetite and gratify the sense of hunger.

"It is difficult to leave the subject of reducing without a word of caution against the so-called health foods, reducing breads and slenderizing drinks," Dr. Millman concluded. "There is no food or drink that contains fewer calories than zero.

"Advertising claims notwithstanding, there is no patent medicine on the market capable of reducing a single ounce of weight without risk, and no one, of course, should ever take any reducing medicines without strict medical advice and supervision.

"It should be clear by now that all freak, slipshod diets are dangerous, and that no single diet can suit every reducer's purpose. There is no short cut to successful and permanent weight reduction. The only safe and effective reducing diet is one based on sound, scientific medical knowledge."

WHY, DOCTOR?

A thirty-minute "live" show featuring timely discussions by local medical doctors on health and medical topics.

8:00 P.M., KGO-TV, SAN FRANCISCO

Every Other Sunday

CHANNEL 7—A public service feature of KGO-TV in cooperation with the

CALIFORNIA MEDICAL ASSOCIATION
and Local County Medical Societies

DOCTOR: *When an acid douche is indicated*



The Many Negatives of Vinegar

Kind? Age? Contaminants? Strength?

Patient Objection

Rx PRO-ACET (Professional Acetum)

1. Buffered pH 4
2. Detergent (approved type)
3. Favorable Surface Tension (wetting action)
4. Leaves Residual Carbohydrates
5. Economical (approx. 3¢ per qt.)
6. Patient Acceptance

OR

Formula for Pro-acet Concentrate: Citric Acid 2.5%; Acetic Acid 4.0%; Lactic Acid 2.0%; Sodium Lauryl Sulfate 3.0%; Dextrose 5.0%; Lactose (beta) 2.5%; Sodium Acetate 2.5%; Methyl Paraben 0.2%; all chemicals U.S.P. in a solution of Distilled Water.



Directions: To prepare vaginal douche add one teaspoonful of Pro-acet Concentrate to each quart of warm water and MIX WELL.

Physicians' Samples on Request

PRO-ACET, Inc., 290 41st Street, Oakland 11, Calif.

this
underweight
patient
could



gain 15 pounds

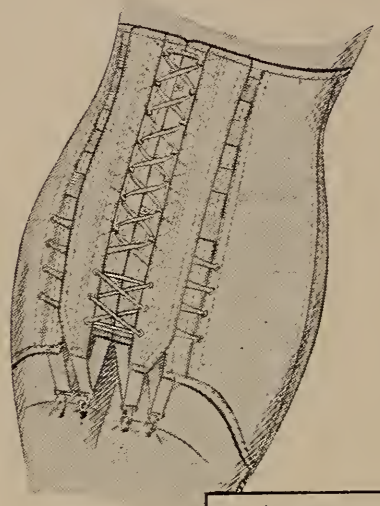
with **EDIOL**

Micronized emulsion of coconut oil (50%) and sucrose (12½%)

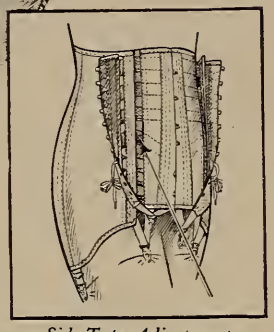
caloric boost
<u>without</u> gastric burden

Schenley Laboratories, Inc.
New York 1, New York

CUSTOM-FITTED to the Patient's individual requirements with no delay!



the Dora Miles corrective support



Side Tape Adjustment

The SIDE TAPE ADJUSTMENT is a distinctly new feature, in a front closure, and consists of a series of horizontal tapes connected to the flexible lacing hook section. The tape lies flat against the body and cannot be seen through the outer garments.

This patented SIDE TAPE ADJUSTMENT working in unison with the flexible lacing hook section, allows the corset to be laced from the groin line upward, lifting and supporting the abdominal wall and its organs with a minimum pressure.

Dora Miles Patented Adjustable Sections permit the garment to be tightened at any given spot, thus assuring firm support and control without pads or straps. The pelvic girdle is held firm at all times, thus giving a comfortable yet firm sacroiliac or lumbosacral support.

SOLD BY LEADING SURGICAL DEALERS

Send for literature

THE DORA MILES COMPANY BRANFORD, CONN.

Allergies in Newborn May Be Minimized By Diet Restrictions

Withholding cow's milk from the diet of a newborn child whose parents, brothers or sisters have a major allergy may prevent the infant from developing an allergy in later life, in the opinion of Drs. Jerome Glaser and Douglas E. Johnstone, Rochester, N. Y.

"Pediatricians and pediatric allergists have often observed that food sensitivities occur much more frequently in the first few months of life than in later infancy and childhood and in adults," the doctors wrote in a recent issue of the *Journal of the American Medical Association.*

"It is assumed that a physiological immunologic immaturity exists in the early months of life that results in sensitization and clinical symptoms caused by absorption from the intestinal tract of unaltered proteins in potentially allergic children."

As a result of this and similar observations, the doctors theorized that "if cow's milk protein, which constitutes the chief source of food and is the commonest cause of food allergy in the early months of life, were completely withheld from the infant's diet until this period of physiological immunologic immaturity passed, the symptoms of milk allergy might be minimized or even prevented."

Experimental tests to bear out this theory were described by the doctors. Ninety-six infants whose parents, brothers or sisters suffered from such allergic diseases as asthma, eczema, rose or hay fever, and perennial allergic rhinitis were given a soybean milk formula instead of cow's milk from the day of birth until they were several months old. Cow's milk then was introduced gradually into their diets. When the child was breast-fed, eggs, foods consisting largely of eggs, and all cheeses were omitted from the mother's diet; her intake of cow's milk was limited.

Two other groups—one consisting of 65 infants and one of 175—whose families had histories of allergies were maintained on a normal diet from birth and acted as controls.

Follow-up studies of as long as 10 years indicated that approximately four times as many infants in the control groups developed major allergic diseases as did those in the group fed the soybean milk formula. Only 14 (15 per cent) of the infants fed the soybean milk formula developed allergic diseases, as compared with 42 (64 per cent) and 91 (52 per cent) of the control groups.

"Perhaps the greatest significance of these findings is the possibility of applying the general principles of prophylaxis to the immunologic and allergic management of potentially allergic children," the doctors stated.

"Pediatricians have been concerned with the phy-

(Continued on Page 14)

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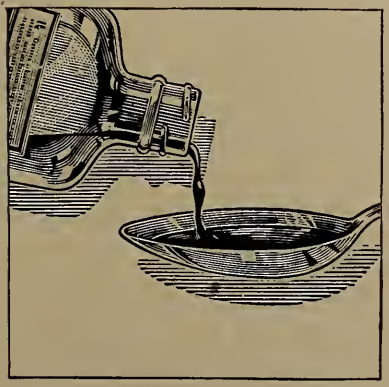
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Allergies in Newborn May Be Minimized By Diet Restrictions

(Continued from Page 10)

sical and mental growth and development of infants, with emphasis on prevention of infections and nutritional, orthopedic, orthodontic and psychogenic diseases. Now it may be possible to reduce the incidence of major allergic syndromes, which are such a perplexing part of a pediatrician's responsibility.

"There is also evidence, although unequivocal proof is lacking, that the fetus may be sensitized to foods ingested by the mother. For this reason, during pregnancy many of the mothers in our experimental group were placed on a special diet to reduce the likelihood of sensitizing their offspring to particular foods, especially eggs and milk.

"While we have no evidence that this diet actually accomplishes its purpose, we believe that its use is reasonable on theoretical grounds, particularly since it can do no harm."

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Dried Blood Plasma Aids in Treatment of Bed Sores

Dried blood plasma and Peruvian balsam, in the form of a paste, have produced striking beneficial effects in the treatment of ulcerated bed sores, it was reported in a recent issue of the *Journal of the American Medical Association.*

Preliminary studies showed that the preparation caused rapid healing, according to Drs. A. Bernice Clark and Howard A. Rusk, New York. A striking effect was noted especially in those ulcers in which there was dead tissue and infection. In such cases, the paste's action in removing all dead tissue and infection from the wound "was most significant," the doctors added.

Eleven patients with spinal cord injuries who had ulcerated bed sores were treated with the paste over a period of 14 months. In later tests, however, only powdered plasma was used. The paste was packed into the ulcer and covered with a single layer of sterile gauze. A piece of oiled silk or other moisture-proof material, slightly larger than the gauze, was placed over the gauze and the area sealed. Protective dressings were put over this to absorb any possible seepage. The dressings ordinarily were left undisturbed for three days and changed on the fourth day. A fresh paste was made for each dressing.

"In all instances, rapid growth of granulation tissue was noted after the third or fourth application," the doctors pointed out. "Bleeding occurred occasionally. In one case only, the treatment was discontinued because of frank bleeding after application of the paste.

"The least responsive type of ulcer was that in which firm scar tissue had already formed. In the ulcers without scar tissue, the new epithelium more closely approximated normal skin rather than the thin type usually covering the scarified area.

"While receiving this type of conservative treatment, the patients were able to be on a partial program of active rehabilitation training."

Malnutrition has long been recognized as a definite deterrent to healing, the doctors stated. It is assumed that a major contributing causal factor in ulcerating bed sores is a local and temporary deficiency of blood, and, consequently, poor nutrition to the part of the body involved. To expose the affected area to as natural a nutritional environment as possible, in order to promote more rapid healing, it appeared logical to use plasma, the doctors added.

Because of the striking results in this form of treatment of ulcerated bed sores, the doctors hypothesized that dried blood plasma contains an enzyme, which digests proteins, that becomes activated, adding:

"This would explain the accelerated debridement resulting in a more promising and normal cellular

(Continued on Page 22)

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Dried Blood Plasma Aids in Treatment of Bed Sores

(Continued from Page 18)

environment for new granulation tissue. We have used the dried plasma up to this time only on ulcerated bed sores, but it is hoped that it may prove beneficial in other types of indolent ulcers."

Dr. Clark is a fellow in physical medicine and rehabilitation and Dr. Rusk is professor and chairman of the department of physical medicine and rehabilitation at the New York University College of Medicine.

World Medical Association to Meet In Rome Next Year

The World Medical Association will hold its 1954 meeting in Rome, September 26 to October 2. Any A.M.A. member who wishes to attend this meeting should write to the World Medical Association, 345 East 46th Street, New York 17, as soon as possible. The W.M.A. will secure transportation, hotel reservations, and help plan any side tours of Europe which the member desires. No charge is made to the physician for this service.

—The A.M.A. Secretary's Letter

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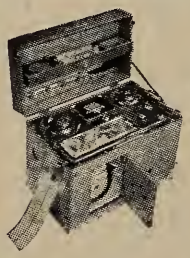
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1. HUFFORD, A. R.: MICH. STATE MED. SOC. 49:1308, 1950.

2. MCHARDY, G. AND BROWNE, D.: SOU. MED. J. 45:1139, 1952.

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Brevity Comes of Age

A new University of Illinois gadget called a "Time Compressor" ought to have a bright future in medicine. Doctors everywhere, and especially some of the staff people at headquarters here, can certainly make eventual use of this machine or any other device which makes possible the conservation of both listening and talking time.

The "Time Compressor" speeds up words or music without changing tone. An hour of recording time can be compressed to 45 minutes. Compressions of 10 per cent cannot be noticed. It is claimed that more than 50 per cent of the time can be discarded without destroying understanding. Scientists have known for a long time that the ear is faster than the mouth; that words can be understood more rapidly than they can be spoken. Attempts at talking fast fail because the speaker usually slurs or trips over his words. The new invention overcomes this by recording speech in a condensed form without changing the pitch, as happens when an ordinary recording is speeded up.

Development of the device is in its infancy right now, but we hope that further work will make it possible to cut the flow of gab at the sending as well as receiving end. Result: Some free time for which all of us are pleading.

—The A.M.A. Secretary's Letter

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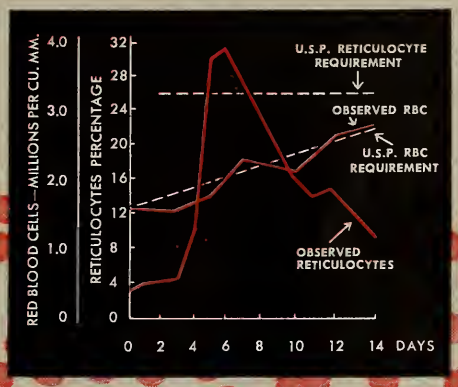
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Exploitation of Heartbreak Cases a Sham

Lately, all of us have been seeing more and more exploitation of heartbreak cases by television, radio and newspapers.

The subject of medically-needy cases, especially those that are tearfully pictured before television audiences, came in for a good share of discussion recently at a public relations conference sponsored by the Medical Society of the State of New York and attended by representatives from most of the 61 county medical societies comprising the state organization.

A "heartbreak case" was defined as an appeal for funds through television, radio or press to pay for extensive medical care or an operation, the cost of which is overwhelming to the person involved.

The consensus at the meeting was that exploitation of these unfortunate cases must stop.

Dr. James D. Tyner, Newark, told the conference that investigation of many heartbreak cases showed that patients did not consult with hospital authorities or ask their county medical societies what could be done. "Instead," he declared, "they chose to glamorize their plight."

"The patient must be informed that regardless of ability to pay he need only ask to receive the services of a doctor or hospital care," Dr. Tyner stated. "In these cases, the county medical society, state welfare department and voluntary health organizations are ready to help every deserving person.

"How many people know that doctors in wards and clinics of hospitals throughout America give

(Continued on Page 33)



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Exploitation of Heartbreak Cases a Sham

(Continued from Page 32)

their services daily without charge? The average doctor spends 12 per cent of his working hours doing charity work. The dollar value of the time given to charity patients by the average M.D. is more than $3,000 annually and his donation of time from 1947 to 1951 increased 15 per cent."

In addition to the medical profession's deep concern with the problem, he pointed out that the social welfare laws of New York State make it mandatory upon the welfare district to provide medical and hospital care for those persons unable to secure necessary medical and hospital care.

"Physicians are already giving service to thousands of potential heartbreak cases in their everyday duties," Dr. Tyner said. "We must let the people know this fact, and try to prevent the few cases that are dramatized from damaging the good name of American medicine."

—The A.M.A. Secretary's Letter

Rural Health Conference To Be Held in Dallas

"Let's Put More 'U' in Comm*Unity*" will be the theme of the ninth National Conference on Rural Health, sponsored by the A.M.A. Council on Rural Health, to be held at the Baker Hotel in Dallas, March 4 through 6.

Leaders in the fields of medicine, agriculture, education and public health will attend the formal sessions which begin at 2 p.m. on Thursday, March 4, and continue through Saturday, March 6, ending with a luncheon meeting at 1 p.m.

Following the practice of the last few years, an informal, preconference session for doctors only will be held at 10 a.m. on Thursday, March 4. Council Chairman F. S. Crockett, Lafayette, Ind., said this session would be devoted to problems confronting physicians who are members of state rural health committees or committees handling rural health problems.

—The A.M.A. Secretary's Letter

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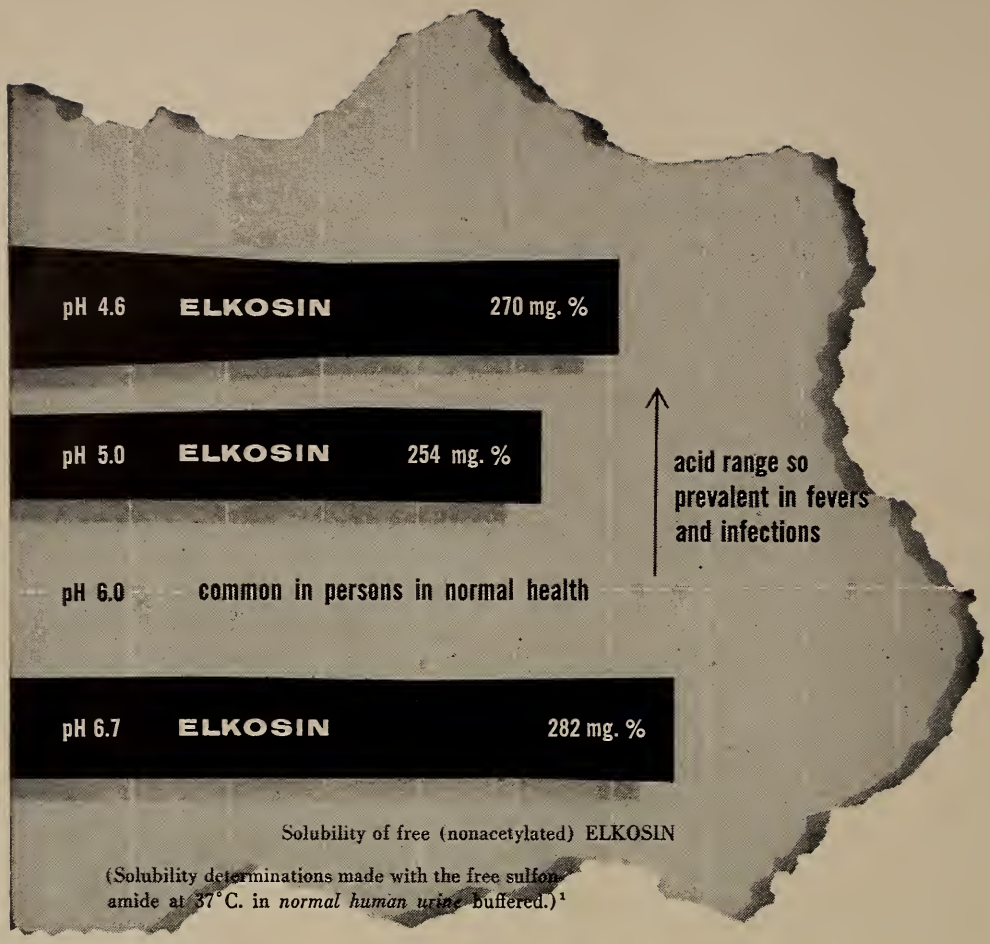
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1. Ziegler, J. B.; Bagdon, R. E., and Shabica, A. C.: To be published.

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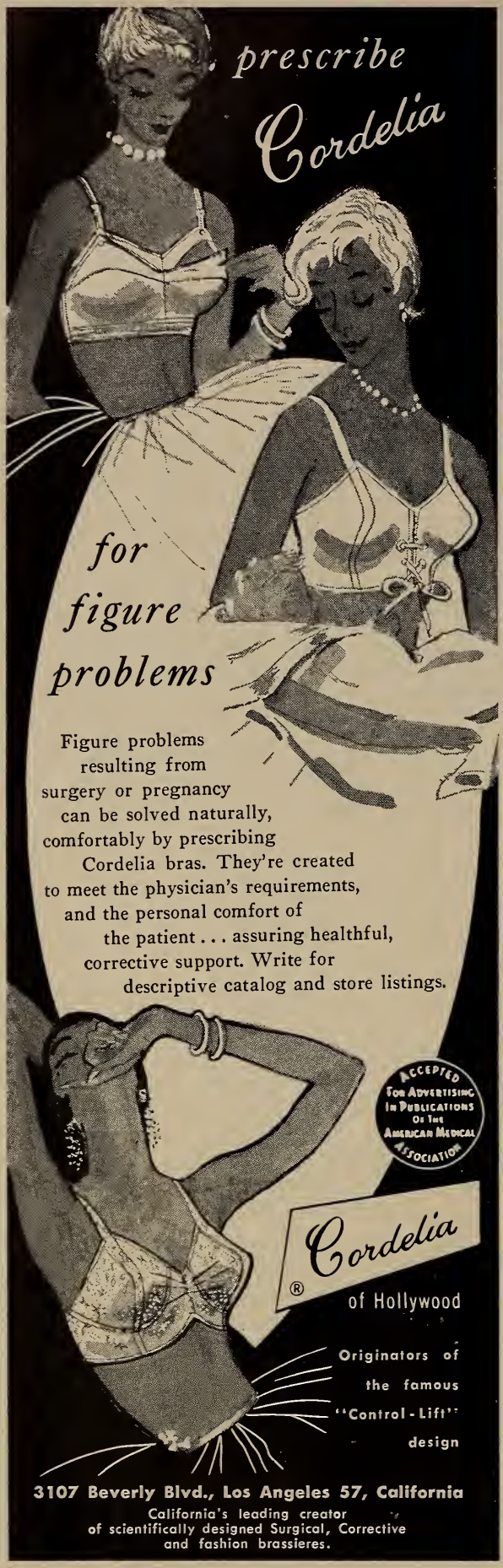
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Modern Medical Therapy Offers Hope For Alcoholic

"Once an alcoholic, always an alcoholic" does not hold true.

Today, the former gloomy prognosis of alcoholism has been replaced by an attitude of hopefulness and interest that is entirely justified, in the opinion of Drs. Daniel J. Feldman and Howard D. Zucker, New York.

In recent years, they stated, there has been an increasing awareness that alcoholism is a serious medical problem affecting several million persons in the United States. The introduction of new drugs, the advance of psychiatric knowledge and techniques, and the advent of Alcoholics Anonymous have caused the change in the attitude that formerly surrounded this affliction. However, the doctors stressed:

"There is not now, and probably never will be, any simple method of turning an alcoholic into a nonalcoholic. As in any chronic illness, a period of long, hard work must be contemplated."

The acute alcoholic state is a crisis in the course of chronic alcoholism. It is the period of uncontrolled drinking which interferes with a person's ability to function effectively. Most destructive acts and consequences usually occur during this period of drinking, which may last from a day or two to several months, the doctors wrote in a recent issue of the *Journal of the American Medical Association.*

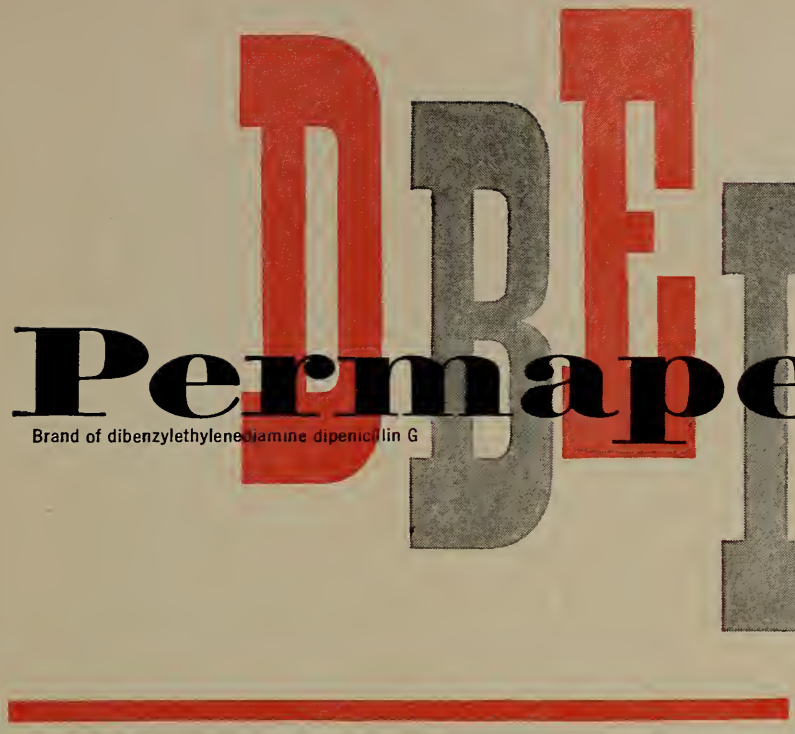
"When successfully managed, this phase of alcoholic disease offers an excellent opportunity for orientation of the patient to the real nature of his illness and to begin the over-all, long-range program necessary for its alleviation and the patient's rehabilitation.

The ideal place for treatment of the acutely alcoholic patient is a hospital, the doctors pointed out. Hospitalization allows the physician complete control over the patient, it is particularly helpful in the abrupt withdrawal of alcohol, and it removes the patient from home situations which may have been instrumental in bringing about the acute drinking episode.

According to the doctors, the first step in rehabilitation should be the correction of existing abnormalities of fluid balance, salt and nutritional deficiencies, and coexisting diseases. Symptoms associated with acute alcoholic intoxication, such as marked hyperexcitability, restlessness, and nausea or vomiting, also should be controlled.

The management of acute alcoholic intoxication has been radically changed by the introduction of such adrenal steroid hormones as aqueous extracts of the adrenal gland and corticotropin, the doctors stated. Although the exact relationship of such hor-

(Continued on Page 42)



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Modern Medical Therapy Offers Hope For Alcoholic

(Continued from Page 38)

mones to alcoholism has not been conclusively demonstrated, their use may present striking and rapid improvement in such cases.

Marked tremor, tension feelings and psychomotor hyperactivity symptoms may be significant features of the immediate postalcoholic state, they said. These symptoms are very disturbing to the patient and are the most important cause of immediate resumption of drinking. Therefore, it is of the utmost importance that every effort be made to relieve them, and that the patient be kept under control until they have sufficiently disappeared.

After the initial withdrawal of alcohol, long-range medical therapy must be instituted. Recently developed medical therapies have greatly increased the success of management of alcoholism. Although nutritional and hormonal treatment aids in rehabilitation, the doctors stated they believed "the most important advance in the medical management of chronic alcoholism has been the advent of disulfiram (Antabuse)."

"The role of disulfiram is to provide the patient with a simple and clear-cut temporary reason not to

(Continued on Page 46)

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Modern Medical Therapy Offers Hope For Alcoholic

(Continued from Page 42)

drink, namely, the inability to drink without getting sick," they said. "This reality ordinarily outweighs any rationalizations or impulses of the moment."

In addition to medical treatment, psychotherapy must be considered in the long-range therapy of alcoholics, the doctors stated, adding:

"We are of the opinion that most alcoholics have underlying personality problems of varying magnitude and that proper treatment must include a therapeutic approach to these problems through one or more of many fruitful channels, such as counseling by an understanding physician or religious advisor, individual or group psychotherapy, or Alcoholics Anonymous. Such a systematic approach to reorientation of the personality is fundamental in the long-term treatment of alcoholism."

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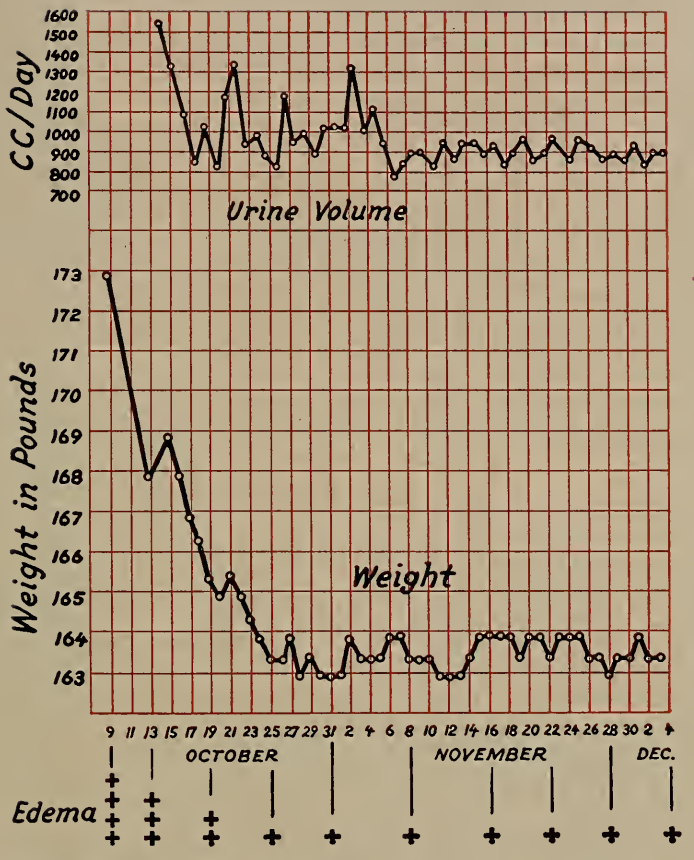
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DIAMOX, 250 mg/d.—Chart shows effects of administration of 250 mg. DIAMOX once a day on weight, urinary volume and edema of ambulatory patient (female, 47 years old) with chronic rheumatic heart disease. Patient previously required mercurial injections every 2 to 3 weeks. (Based on data from Belsky, H.: Personal communication, October, 1953.)

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(Continued on Page 54)

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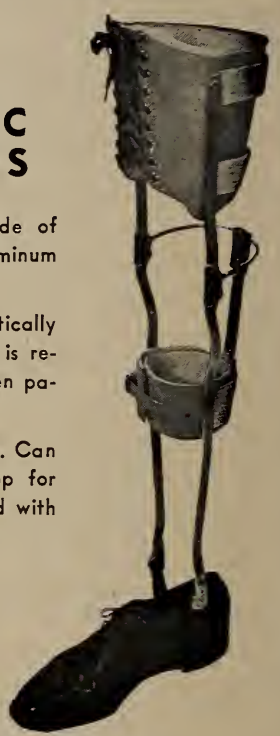
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Music Proved a Therapeutic Aid

(Continued from Page 50)

are required to stay in bed for long periods of time."

Music is a useful adjunct to physical therapy, the editorial pointed out. Mentally defective persons are more easily handled when soothing, rhythmic music is performed, and it has been found in dentistry that music allays anxiety, raises the pain threshold, and improves the doctor-patient relationship. Some obstetricians use music to allay anxiety and raise the pain threshold during arduous hours spent by patients in the labor room.

It also has been observed, the editorial added, that music in the operating room serves as a beneficial adjunct to the administration of local, regional, or spinal anesthesia, and that it diminishes apprehension in patients.

New Drug Believed Effective in Treating Toxemia of Pregnancy

Protoveratrine, a relatively new drug, is a valuable adjunct to the obstetrician's armamentarium in the management of toxemia of pregnancy, in the opinion of Dr. Edward Meilman, Boston. Toxemia of pregnancy, a series of pathological conditions occurring in pregnant women, is characterized by rapid weight gain, accumulation of fluid, disturbances of vision, high blood pressure, headache, excessive albumin in the urine, and convulsions.

Although use of protoveratrine is not intended to replace certain fundamentals of treatment in toxemia such as bed rest and sodium restriction, it offers prompt control of the symptoms, Dr. Meilman wrote in a recent issue of the *Journal of the American Medical Association.*

He reported on the use of protoveratrine in 17 pregnant women suffering from various forms of

(Continued in Back Advertising Section, Page 60)

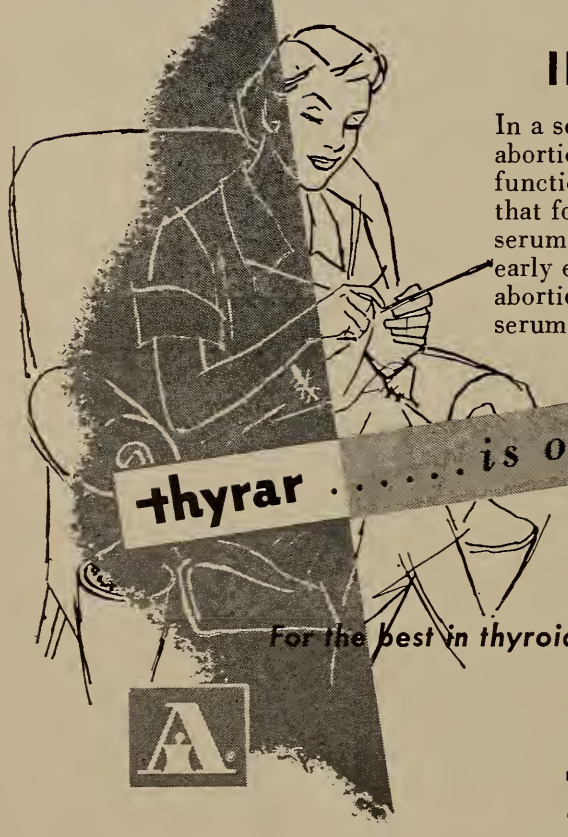


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(1) Perlmutter, M.: Metabolism 2: 81, 1953; (2) Jones, G. E. S., and Delfs, E.: J.A.M.A. 146: 1212, 1951; (3) Man, E. B., et al.: J. Clin. Investig. 30: 137, 1951.

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California MEDICINE

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Volume 79 • DECEMBER 1953 • Number 6

Unilateral Renal Disease and Hypertension

EDGAR BURNS, *M.D.*, New Orleans, La.

• Cure is obtained in about 20 per cent of patients with unilateral renal disease and hypertension who have nephrectomy primarily for relief of hypertension. Carrying out urologic studies on a larger number of hypertensive patients might result in tracing the condition to renal disease in more cases. Renal angiography more accurately indicates renal origin of hypertension than any other diagnostic study. When it can reasonably be established that hypertension is of renal origin, nephrectomy should be performed unless there is some general contraindication to an operative procedure.

THE CLOSE RELATIONSHIP between hypertension and pathologic conditions within the kidney was probably first recognized by Bright,[2] whose original observations on renal disease were published in 1836. A possible intrarenal humoral mechanism was first considered as a cause of hypertension by Tigerstedt and Bergmann[11] in 1898. They induced hypertension experimentally by injecting a saline extract of normal kidney into animals. In 1905 Katzenstein[5] ligated the renal pedicle in animals for short periods and observed a temporary rise in blood pressure following release of the ligatures. Schwarz[9] in 1924 and Ask-Upmark[1] in 1929 described cases of hypertension in which at postmortem examination it was observed there was disease of only one kidney. Quinby and Simeone[8] in 1923 and Crabtree[3] four years later recorded cases in which hypertension that was associated with a diseased kidney was relieved, serendipitously, after nephrectomy was carried out. It was the report of Goldblatt[4] in 1934, however, that gave real impetus to the study of unilateral renal disease as a cause of hypertension.

The literature now contains over one thousand articles on experimentally induced hypertension and there is still no uniform explanation as to the mechanism by which it is brought about in animals or as to the relationship of hypertension to unilateral renal disease in human beings. Page[6] and many other investigators have expressed belief that the substance causing hypertension in the Goldblatt experiment is a proteolytic enzyme called renin. Renin is thought to react with a plasma globulin, *hypertensinogen*, to release an active pressor polypeptide, *angiotonin*. It has been shown that for some weeks after induction of Goldblatt hypertension in dogs the renin concentration in the systemic blood is increased. Ultimately, however, this substance disappears from the systemic blood even though hypertension persist. It is considered by many investigators that some other substance or mechanism is operative after the original induction of hypertension by renin. Another possibility is that the kidney fails to detoxify normally existing pressor compounds. A third theory is that the kidney fails to produce its normal supply of

Speaker's address: Presented before the General Meeting of the 82nd Annual Session of the California Medical Association, Los Angeles, May 24 to 28, 1953.

From the Departments of Urology, Ochsner Clinic and Tulane University of Louisiana School of Medicine, New Orleans.

humoral agents. Whether or not any of these viewpoints is correct is still not known.

It appears, however, that a number of etiologic factors must be involved in the production of hypertension. Two known causes are pheochromocytoma and unilateral renal disease. That these lesions are responsible for more than a small proportion of cases of hypertension seems unlikely. On the other hand, since hypertension produced by these two lesions is amenable to possible surgical cure, it seems important to subject a larger number of hypertensive patients to appropriate study in order to select cases for surgical treatment.

INCIDENCE OF HYPERTENSION

Statistical data indicate that hypertension is encountered in approximately 25 per cent of the adult population. It is reported to account for more deaths each year than cancer, tuberculosis and accidents combined. During the past ten years there have been slightly more than 138,000 general admissions to the Ochsner Clinic. A diagnosis of hypertension was made in 7,790 of the patients.

There are four unilateral renal lesions that are usually considered possible causes of hypertension. These are atrophic pyelonephritis, infected hydronephrosis with or without stone, renal tumor and intrinsic obstructive lesions of the renal pedicle. In addition, renal tuberculosis may account for an occasional case. It has also been suggested that localized injury to the renal cortex incident to nephrostomy or resection of a portion of the kidney might result in enough sclerosis to cause hypertension.

Approximately 300 cases in which nephrectomy was performed primarily for the relief of hypertension have been reported in the literature. In only about 20 per cent of them could the condition be considered cured in that systolic blood pressure did not exceed 140 mm. of mercury or diastolic pressure 90 mm. for two years after operation.

Of patients with hypertension observed by the author who were subjected to urologic study, 20 had unilateral renal disease which was considered a probable cause of the associated hypertension. In 12 of these the diagnosis was atrophic pyelonephritis and nephrectomy was performed primarily for the relief of hypertension. One patient had calculous atrophic pyonephrosis and six others had calculous pyonephrosis or infected hydronephrosis. Nephrectomy was indicated in these seven cases irrespective of the hypertension. One patient had multiple aneurysms of duplicated renal arteries. In the series of 20 cases in which nephrectomy was done, three patients with atrophic pyelonephritis and one with infected hydronephrosis met all the criteria of cure, that is, the systolic pressure was maintained at 140 mm. of mercury or below and the diastolic pressure at 90 mm. or below for at least two years. Apparent cures were obtained in some of the other patients, especially the one with multiple aneurysms, but at the time of this report not enough time had elapsed for final evaluation. Thus, the proportion of cures in the series of 20 cases was the same as that reported by others. This means that in only one of every five patients is the hypertension improved by removing a diseased kidney. In the cases reported in the literature, the highest proportion of cure is in patients with atrophic pyelonephritis. Three of the four patients in the present series who were cured had atrophic pyelonephritis.

In light of the fact that among patients with identical renal lesions (such as the 12 patients in the present series with atrophic pyelonephritis) some do not have hypertension and of those who do have the disease some are cured of it by nephrectomy while others are not, considerable controversy has arisen as to the relationship of unilateral renal disease to hypertension. The following cases illustrate opposite effects of renal lesions on the blood pressure.

Case 1. The patient was a girl 17 years of age who had had her first attack of pyelitis at the age of 18 months. The blood pressure at the time of admittance to hospital was 240 mm. of mercury systolic and 140 mm. diastolic. Intravenous urograms showed a small, poorly functioning right kidney and a slightly hypertrophied, normally functioning left kidney. The urine was not infected at the time of examination. Ophthalmoscopic examination showed bilateral retinal arteriosclerosis. The retinal arteries were considerably thickened and there was variation in the calibre of the vessels. There were scattered areas of retinal hemorrhage. Retinal edema in the vicinity of the disks was sufficient to partially obscure retinal vessels in places. The history and findings suggested renal origin of the hypertension. Since the urine was sterile, hypertension was the only indication for operation. Right nephrectomy was performed. Three weeks later the blood pressure was 120 mm. of mercury systolic and 80 mm. diastolic. It is now seven years since nephrectomy and the blood pressure has remained normal throughout that period. The abnormal changes in the eyegrounds have completely disappeared.

Case 2. The patient was a 30-year-old woman with a history of recurrent attacks of infection of the urinary tract. The urine at the time of examination contained Staphylococcus albus. Roentgenographic study of the upper urinary tract disclosed a small, contracted right kidney containing multiple small stones and localized atrophy of the lower pole of the left kidney. The function of the remaining portion of the left kidney was within normal limits. The blood pressure was 118 mm. of mercury systolic and 76 mm. diastolic. After the atrophic right kidney was removed, the urine became sterile. The blood pressure, now five years postoperatively, is still normal (120 mm. of mercury systolic and 90 mm. diastolic), indicating that the atrophic right kidney in the first place and now the localized area of sclerosis in the lower pole of the left kidney were not, in this case, factors of importance insofar as blood pressure is concerned. The only indication for nephrectomy in this case was the infection in the kidney.

COMPARISON OF PATHOLOGICAL DATA WITH RESULTS OF OPERATION

In an effort to understand this difference in manifestation of similar lesions the pathologic reports of the 12 cases of atrophic pyelonephritis were reviewed and, since it seemed likely that the answer might lie in the course followed in the development of the renal lesion, the vascular pattern was studied in those cases in which renal circulation was visualized preoperatively. Examination of the specimens removed at operation showed that, in all cases in which hypertension was cured, there was severe sclerosis of the renal pedicle. In some of the cases in which the patients were not improved, there was minimal involvement of the pedicle. In others the pathological alterations in the two groups were identical. In order to explain this difference in effect upon blood pressure it may be assumed that if the Goldblatt mechanism is initiated, the renal artery or one of its main branches would have to be involved early in the course of the disease while the kidney still had enough functional value to react.[5, 9] On the other hand, if the disease process is primarily active in the renal cortex with involvement of the vessels of the renal pedicle only in the late or end stage, an explanation would be offered for lack of influence of the renal lesion on blood pressure in a large number of cases.[1, 8] Hypertension has been reported relieved in a few cases following removal of a large renal tumor or hydronephrosis. There was one such case in the present series. It is apparent that the mechanism in such cases is produced by pressure of the mass on the renal pedicle, thereby simulating the Goldblatt mechanism.[3, 4, 6] Intrinsic obstructive lesions of the renal pedicle probably more closely resemble this phenomenon than any other unilateral renal lesion. The following is an example of such cases.

Case 3. The patient, a boy nine months of age, was first seen in the Ochsner Clinic on July 28, 1952. For about three months the baby had had low grade fever and vomiting and had not gained weight. The outstanding observation in examination was that the blood pressure was 220 mm. of mercury systolic and 180 mm. diastolic in both arms and 210 mm. systolic and 180 mm. diastolic in the legs. Spastic arteries were noted in the eyegrounds and there was a macular scar in the right eye. There was no papilledema. The specific gravity of the urine was 1.002 and the albumin content 3 plus. A few erythrocytes were noted upon microscopic examination. Roentgenographic studies, including intravenous urograms, revealed nothing of significance aside from what appeared to be an extrinsic lesion compressing the esophagus from the left. The child was tested with benzodioxane and the response was normal. The same test was repeated using regitine with the same result. Although results of tests for pheochromocytoma were negative, the chest was explored and a mass which proved to be nothing more than an enlarged lymph node was removed. The hypertension persisted.

The patient returned two months later with the condition unchanged except for definite increase in the size of the heart. Everything else having been done, it was believed that the renal circulation should be visualized. A retrograde aortogram was made by exposing the right femoral artery and introducing a cannula for the injection of Diodrast through a catheter into the aorta. The aortogram outlined a normal vascular pattern in the left kidney, but on the right two renal arteries, both containing multiple aneurysms, were visualized.[7] At operation the lower two thirds of the kidney was observed to be grossly ischemic and it was found that the lower of the two renal arteries contained a thrombus.[10] Right nephrectomy was done with ligation of the renal pedicle between the most medial aneurysms and the aorta. The baby recovered without incident and the blood pressure on discharge from the hospital was 105 mm. of mercury systolic and 70 mm. diastolic. When last observed, eight months after operation, the blood pressure was 90 mm. of mercury systolic and 70 mm. diastolic. The eyegrounds had improved and the baby seemed well from every standpoint. If the Goldblatt theory of the mechanism is correct, one might expect hypertension to be produced by a lesion of this type and a good result to be obtained from its removal. Cure apparently was obtained in this case.

In an attempt to determine whether localized injury to the renal cortex from surgical procedures on the kidney might set up a mechanism for hypertension, the author reviewed all cases observed in a period of 18 years. This review failed to support such a viewpoint. In a few cases in this group in which hypertension developed the suspected kidney was removed on the basis that it might be a possible cause of hypertension. In no case was the blood pressure influenced by the operation. Localized areas of sclerosis that involve only the smaller vessels in the cortex are apparently not enough to set up a mechanism for hypertension.

STUDIES FOR SELECTION OF PATIENTS FOR NEPHRECTOMY

As to cases in which there are renal lesions of other kinds, how is one to select cases that are apparently amenable to improvement by nephrectomy and at the same time eliminate those cases in which the only indication for operation is hypertension? There is no characteristic clinical picture of unilateral renal hypertension. The history is of little value. It has been reported that hypertension in such cases is not only severe in intensity but has the clinical manifestations of the so-called malignant type.[7]

Hypertension is an extremely variable disease characterized by wide fluctuations in blood pressure occurring under varying conditions. A single determination of blood pressure is therefore of little value. It is important to determine that the blood pressure has remained persistently elevated and also to evaluate the status of the entire cardiovascular system. The kidneys should be investigated from both functional and structural standpoints. It must be established that one kidney is diseased, its function is reduced and the function of the opposite kidney is

within normal limits. Determinations of urea clearance and of the urea content of the blood and differential phenolsulfonphthalein tests, together with a complete roentgenographic examination of the upper urinary tract, have long been employed. Aortography or renal angiography is the most recent and perhaps the most important diagnostic adjunct for suggesting a renal origin of hypertension. Visualization of the renal vascular tree by this means is now a routine procedure in the study of hypertensive patients in whom studies of the urinary tract demonstrate a unilateral renal lesion. During the past two and one-half year more than 300 renal angiograms on patients having the commonly encountered renal lesions have been made at the Ochsner Clinic. From a study of the vascular pattern, the author came to the belief that if the Goldblatt phenomenon is to be accepted, one may make a better selection of cases in which hypertension may be improved by nephrectomy. Improved methods of examination will alter the indications for any operative procedure and angiography may change the indications for nephrectomy in hypertension.

CRITERIA FOR OPERATION

Certain basic principles, however, should be followed in dealing with the individual case. The criteria laid down by Schroeder and Fish[10] for nephrectomy in hypertension have been generally followed. They are: (1) the arterial hypertension must be of recent origin (within two years); (2) the renal lesion must be unilateral and must have reduced the function of the involved kidney; (3) the function of the opposite kidney as measured by the currently used renal function tests must be within normal limits; (4) retinopathosis should be absent and changes in the calibre of the retinal vessels should be minimal; and (5) the arterial pressure should be persistently high. It is generally recognized that better results will be obtained in patients under 45 years of age because older persons are more likely to have generalized irreversible vascular changes.

Obviously, however, no definite rules should be arbitrarily followed in dealing with a disease as variable as hypertension and a subject as flexible as the human body. The author does not believe that the age of the patient or the duration of the hypertension necessarily constitutes a contraindication to nephrectomy, provided the renal vascular pattern indicates that the high blood pressure may be due to the renal lesion and that there are no general contraindications to an operative procedure. It appears also that changes in the retinal vessels, while supplying valuable information as to the extent of vascular changes, do not constitute a contraindication to the operation. Many of these changes will revert to normal (as they did in the case of the 17-year-old girl already cited). On the basis of cause and effect it may be assumed that by removing the cause of the hypertension its progress may be arrested to the extent that the patient may be restored to a more useful and comfortable existence even though the changes that have occurred in the vascular system do not revert to normal. The following case illustrates some of these points:

Case 4. The patient, a 47-year-old man, had had hypertension for at least five years. The blood pressure at the time of examination was 240 mm. of mercury systolic and 130 mm. diastolic. Mild congestive heart failure and severe generalized vascular changes were present. The right kidney was atrophic and poorly functioning.[12] The left was hypertrophied but functioned normally. After urologic studies were completed it was thought that the hypertension might be of renal origin, and even though cure was not probable, it was hoped that by removing the kidney the malignant process might be arrested. Nephrectomy was performed without incident. At operation it was noted that the vessels in the abdominal wall were quite dilated. The aorta, palpated through an opening in the peritoneum, was sclerotic and noncompressible. Angiography was not successful because the needle could not be inserted into the sclerotic aorta without undue force. Immediately after the kidney was removed, Diodrast was injected into the renal artery and a roentgenogram was made to visualize the vascular pattern. A branch of the renal artery supplying the lower third of the kidney was occluded to the extent that no Diodrast could be observed in this area. (This supports the impression that the renal artery or one of its main branches must be involved for a mechanism for hypertension to be produced. Moreover, it is in contrast to the cases of localized sclerosis in which only the arterioles are involved and in which a mechanism for hypertension is not produced.) The patient's blood pressure in the early postoperative period was 170 mm. of mercury systolic and 90 mm. diastolic. At the time of this report, nine months after operation, it was 150 mm. of mercury systolic and 90 mm. diastolic. The patient looked and felt well and had been able to resume normal activity. The author believes that the improvement in the condition of the patient justified nephrectomy even though his condition may never meet the criteria of cure.

The experience in this and several other similar cases indicates that if it can be reasonably established that the hypertension may be of renal origin the kidney should be removed unless there is some general contraindication to an operative procedure. Conclusions, of course, cannot be drawn from such a small number of cases but the variation in the amount of involvement of the vessels of the renal pedicle and perhaps the stage of the disease at which they become involved would appear to explain why one lesion would be an etiologic factor in hypertension whereas another similar lesion would not. The vascular patterns in a large number of cases will have to be studied by this method and patients observed over a long period in order to confirm or deny this viewpoint. It is believed, however, that renal angiography will provide more information

upon which to base the indications for nephrectomy in hypertensive patients than any of the other currently used studies.

Prytania and Aline streets.

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Urges More State Money Be Used in Rehabilitation

THE TIME HAS COME to reverse the trend and use more state and less federal money in vocational rehabilitation work, in the opinion of Secretary Hobby. Addressing the National Rehabilitation Conference, the Secretary of Health, Education, and Welfare noted that in 1921 when the program started the federal share was only one-third. (However, this was for only a part of a year.) Federal contributions reached a peak of 73.5 per cent in 1947, and have declined to about two-thirds for the current fiscal year. Mrs. Hobby remarked that appropriations committees in Congress already have begun to "question the wisdom of providing such a proportion of federal funds for a program keyed to the principle of state operations. . . . To me it is simply additional evidence that the time has come to review and inventory our programs."

Without further elaboration, Mrs. Hobby said that her department "plans to propose legislation to strengthen administration of the program and to permit new approaches to old problems, without disrupting the important work which the state agencies are carrying on daily."

The Secretary indicated she thought the Manion Commission would look into such programs as vocational rehabilitation. She said the commission, currently studying U. S.-state relations, "offers a promise for a healthy reexamination of federal, state and local governmental interrelations, and I think we must all welcome their efforts to clarify the roles of each."

—A.M.A. Washington Letter

Determining Serum Bicarbonate

A Simple Syringe Titrator and Colorimeter

CHARLES W. BOONE, M.D., and JOHN B. FIELD, M.D., Ph.D., Los Angeles

• The use of a tuberculin syringe as a burette has made possible an easy bedside technique for the determination of serum bicarbonate. By combining it with the use of a simple colorimeter, a relatively untrained person can do numerous bicarbonate determinations with a high degree of accuracy. The same technique also lends itself to other colorimetric clinical procedures such as determination of gastric acidity.

THE INCREASING USE of determinations of the content of various chemical elements in the blood to indicate the nature and course of disease has emphasized the need in general for simplifying the technical procedures involved. In certain circumstances simplification could be developed to the point where the determinations could be done by relatively untrained personnel; and to do so would make it easier to have such analyses done quickly without increasing the already heavy burden of the hospital or clinic laboratory.

Scribner[2] reported a bedside procedure, founded on the colorimetric method of Van Slyke,[3] for determining the bicarbonate of serum. In Scribner's procedure a tuberculin syringe is used as a burette.

By modifications of Scribner's method, improvements in accuracy and convenience have been achieved without sacrificing simplicity. The method is as follows: (1) A known amount of acid is added to 1 cc. of serum to react with the bicarbonate present and release carbon dioxide. (2) The carbon dioxide is easily removed by agitation or aeration. (3) The amount of acid remaining, from which may be calculated the bicarbonate present in the serum, is determined by back-titration with sodium hydroxide to the original pH of the serum. This is done by making a standard indicator solution at pH 7.0, and then titrating the sample with added indicator until its color matches that of the standard.

The standard indicator solution is prepared in the following manner: (1) The indicator used is phenolsulfonphthalein (Hynson, Westcott and Dunning, Inc., Baltimore) available in 1 cc. ampules containing 6 mg. per cc. An aqueous solution of 0.05 per cent phenolsulfonphthalein (PSP) is prepared. (2) 2.5 cc. of phosphate buffer at pH 7.0 is placed in a test tube. (3) Five drops of the 0.05 per cent PSP solution is added. (4) Two drops of human serum and one drop of xylol are added, which provides a turbidity resembling that of human serum, as well as resistance to bacterial decomposition. (5) The tube is then sealed. The standard indicator solution, of the color and appearance of human serum with PSP added at pH 7.0, is ready for use. The tube is shaken vigorously before being placed in the colorimeter.

The colorimeter shown in Figure 1 offers a means for obtaining quantitative accuracy when comparing the color intensity of the sample being titrated with the standard. By means of a mirror, the line of sight passes through the tubes lengthwise, thereby obtaining maximum color intensity. Standard illumination is obtained with an ordinary microscope lamp which may be bolted down to the platform. In this arrangement the curvature of the test tube does not interfere and a single bright color of uniform intensity is observed in the mirror.

The tuberculin syringe-burette is constructed as shown in Figure 2. The glass extension is long enough to reach to the bottom of a test tube. When not in use the syringe-burette is kept inserted in the stock bottle through a glass-lined hole in the stopper.

Method:

A. 1 cc. of serum is delivered into a clean dry test tube by means of a tuberculin syringe and No. 25 hypodermic needle, and 5 drops of 0.05 per cent PSP solution is added.

B. Exactly 1 cc. of 0.1 normal nitric acid is added by means of syringe-burette as follows: The syringe-burette is filled while still in place in the stock bottle by drawing the plunger up to the 1 cc. mark. It is then lifted out and placed in the test tube so that the tip of the glass extension is just above the level of the solution, and the 1 cc. of nitric acid is delivered. The amount of solution which remains in the glass extension is constant and therefore introduces no factor of error.

C. The solution is aerated by bubbling air through it via a piece of glass tubing for four or five minutes.

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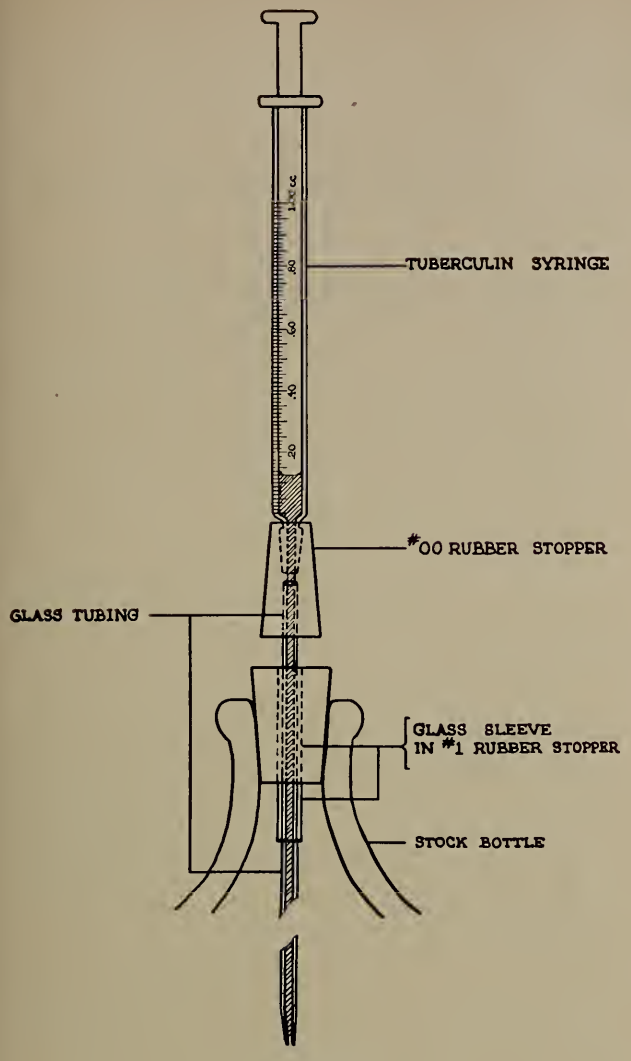


Figure 1*

If compressed air is not available, agitation with a glass stirring rod will suffice. The agitator is left in the test tube for the remainder of the determination.

D. The standard indicator solution is placed in one side of the colorimeter and the light turned on. The sample is placed in the other.

E. Another syringe-burette containing exactly 1 cc. of 0.05 normal sodium hydroxide, drawn as described above, is put into the sample so that the glass extension touches the bottom of the test tube.

F. The sodium hydroxide is added bit by bit with a twisting motion of the plunger until the color of the sample matches that of the indicator, as viewed in the mirror of the colorimeter.

G. The amount of sodium hydroxide left in the syringe-burette (rather than the amount which has been expelled), in hundredths of a cc. divided by 2, is equal to the serum bicarbonate in mEq. per liter.

This method of determining serum bicarbonate has been tested on the diabetic wards of the Los Angeles County General Hospital and has given satisfactory results. As an objective test of its accuracy, 20 determinations were done by three resident physicians and one hospital orderly on separate specimens of blood taken serially from four different patients during recovery from diabetic coma. Duplicate specimens of blood were sent to the hospital laboratory as routine specimens for serum bicarbonate determination. The method used by the laboratory is also a back-titration procedure[1] except that a continuously recording electronic pH meter is used. The results were as follows:

*A completely assembled plastic colorimeter may be obtained from the Ace Plastics Co., 711 South Columbia, Los Angeles.

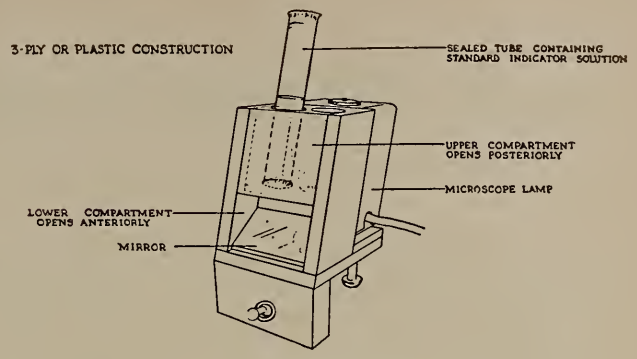


Figure 2

Serum bicarbonate in millequivalents per 100 cc. The result by the method described is stated in roman type, and that by the hospital laboratory in *italics*.

Patient No.	Specimen											
	First		Second		Third		Fourth		Fifth		Sixth	
1.....	2	*7*	4	*7*	7	*8*	12	*14*	26	*27*	35	*35*
2.....	28	*29*	30	*31*	30	*32*						
3.....	3	*6*	16	*16*	21	*22*	24	*25*	30	*30*		
4.....	2	*6*	20	*20*	28	*29*	32	*32*	34	*34*	39	*40*

The syringe-burette and the colorimeter described lend themselves to the simplification of a titrimetric procedure. If the solutions to be compared are transparent, it is advantageous to use test tubes which have their lower third "frosted" with an abrasive such as mineral oil and carborundum, or on a grinding wheel. If an end-point is not sharp, as is frequently the case, a standard end-point color may be placed in one side of the colorimeter and the unknown titrated to match it. For example, the titration of gastric juice using Topfer's indicator to determine the free acidity has a notoriously variable end-point. The author has found that this becomes a simple and dependable procedure if an end-point standard is prepared and used with the syringe-burette and colorimeter described.

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Suicide and Public Health

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• *Suicide as a public health problem is generally underestimated. Deaths from suicide annually outnumber those from cancer of the respiratory system or of other common sites; more than twice as many die by suicide as from most communicable diseases combined. Most suicides are motivated by concern over ill health or domestic difficulties.*

A program tried in Yolo County to follow up persons who have attempted suicide indicates that a more systematic and widespread effort in this direction might be of value to the public health.

It is recommended that attempts at suicide be considered a reportable disease for a one-year period and that a statewide program for following the patients be put into effect to provide rehabilitation as well as symptomatic treatment. Efforts by local health departments and private physicians are also worth while in reducing attempts at suicide.

MEDICAL LITERATURE is replete with references to suicide from medical, toxicological, surgical, cultural and psychiatric points of view. Many writers have discussed the treatment of patients who have attempted suicide, or have described the ways in which persons succeeded in killing themselves. Psychiatrists usually stress the importance of watching states of depression in an effort to prevent suicide, and describe individual cases of depression such as reactive, hysterical, manic-depressive, involutional and presenile; but nowhere in the literature, it seems, is there any attempt to present suicide as a public health problem.

As a criterion of public health significance, it may perhaps be asked whether a particular problem significantly affects the health and happiness of people and, secondly, whether it affects a large enough proportion of the population to constitute a public health problem. The first consideration will be readily acknowledged; suicide does indeed affect health and happiness; if the triteness of the statement can be forgiven, suicide is a fatal disease. The second consideration, the relative magnitude of suicide as a cause of death, is generally underestimated. On a national scale, suicide is ninth among the causes of death and exceeds tuberculosis in many areas. Moreover, among persons aged 55 to 69 years, suicide ranks in many tabulations as fourth or fifth among the causes of death. During the past ten years, 167,624 persons have killed themselves in the United States.[2] In 1949, the last year from which complete and official census reports are available, deaths from malignant neoplasm of the respiratory system numbered 19,518; from malignant neoplasm of the breast, 18,553; from suicide, 16,993. In the same year about as many persons died by suicide as died of congenital malformation.

The national death rate from suicide for all ages was 11.4 per 100,000 in 1949 (in Los Angeles, 16.5), but for the age bracket 65 to 69 it was 31.5, or more than one-third higher than the present overall mortality rate for tuberculosis. In that year deaths per 100,000 population due to cancer of the respiratory system numbered 13.1; due to cancer of the breast, 12.5; due to suicide, 11.4. Surely no one would question the public health significance of malignant disease of the respiratory system or of the breast.

Comparison of the number of deaths from suicide with those from infectious diseases is even more impressive: The total of deaths from typhoid fever, dysentery, scarlet fever and other streptococcal infections, diphtheria, whooping cough, poliomeningitis, meningococcic infections, measles, typhus and malaria is only half the figure for suicide. If to this total is added the number of persons in the United States dying from syphilis and its sequelae, the figure for deaths from suicide is approximated.

Those are national rates, and it could perhaps be hoped the figures in California for the same year would be in different proportion. The fact is, however, that the incidence of suicide in California is relatively high. In 1949 more persons in California died by suicide than of causes which have long been recognized as outstanding public health problems:

Cancer of the breast	1,450
Chronic rheumatic heart disease	1,499
Cancer of the respiratory system	1,515
Diseases peculiar to early infancy	1,563
Cancer of the female genital organs	1,564
Pneumonia	1,669
Suicide	1,738

From the Yolo County Department of Public Health.

Presented before the Section on Public Health at the 82nd Annual Session of the California Medical Association, Los Angeles, May 24-28, 1953.

About twice as many persons die in automobile accidents as by suicide, although it is of course unknown how many among those are accident-prone persons who wish to die.

It is customary in discussing any public health problem to use the so-called epidemiologic approach. From this point of view it may be asked, who attempt suicide, what are their motives, and what proportion succeed? The proportion of successful attempts varies with different motives; the rate of attempts is generally higher among women, but the rate of success is lower.

According to figures collected by the Metropolitan Life Insurance Company,[1] ill health is the leading cause of suicide (40 per cent) in males, and about 50 per cent of attempts at suicide by males are successful when ill health is the motive. In women, about 20 per cent of attempts at suicide are due to ill health and about 25 per cent of attempts are successful. (This should be of particular interest to physicians, as it seems reasonable that giving a patient more definite information about the state of his health and supplying psychological support would eliminate much uncertainty and might thus help to avert an attempt at suicide.)

Inversely, only about 30 per cent of suicides among males are due to domestic difficulties and only 4 per cent to unhappiness in love, these suicides representing 14 per cent and 10 per cent, respectively, of all attempts by males due to these motives, while among women domestic difficulties including unhappiness in love are the motive for 50 per cent of suicides but only 2 per cent of attempts due to domestic difficulty are successful, as are only 0.88 per cent of attempts due to unhappiness in love.

In light of these figures it would seem important to pay attention to the most common motivations and to plan all possible psychological and physiological rehabilitation in persons who have attempted suicide. Ideally, of course, prevention would start before the first attempt, but for this there is seldom an opportunity. The tendency to repeated attempts, however, is illustrated by a ten-year survey of 381 patients admitted to a general hospital after attempts at suicide,[5] in which it was found that 64 had made at least 105 previous attempts. In a third of the 381 a previous diagnosis of mental illness had been made. Ill health and domestic difficulties were the leading motives for attempts at suicide. One-half of the men and one-third of the women were excessive drinkers, and in such persons alcoholism may perhaps be considered gradual suicide in situations of unbearable frustration.

It appears that in most hospitals, unfortunately, practically all persons admitted after attempts at suicide are treated on a purely symptomatic basis. Stomachs are washed out, wrists are sutured, bullets are extracted, fractures and dislocations are reduced, and the patients are sent on their way in the hope that the experience will teach them a lesson.

As some health departments conduct emergency hospitals or other medical facilities, it was thought that at least in those institutions more attention might be given to causative factors in suicide. To verify this, the authors studied the case reports of 62 patients aged 18 to 73 years, who in 1951 were admitted to an emergency hospital operated by a public health department after they had attempted suicide. Here also the main treatment was medical or surgical and the patients were released without further follow-up. It was then decided to attempt a routine follow-up in Yolo County on all patients who are admitted to hospitals or clinics following a suicidal attempt. It was arranged with the county hospital and with some private physicians, as well as with certain law-enforcing agencies, that they would notify the health department of all attempts at suicide coming to their attention. A public health nurse visits the patient while he is still in the hospital or in his home if he is not hospitalized. The main task of the public health nurse is to give the patient support and make him feel that other people in his community are interested in his well-being. Furthermore, in suitable instances, it is her duty to refer the patient either to his physician for further evaluation or to such agencies as a mental hygiene clinic or the welfare department who may be able to relieve some of the pressures that have led to an attempt at suicide.

In many cases, particularly those referred from the county hospital or from public agencies, the follow-up is made by the health department. The following three case histories illustrate the working of the program:

CASE REPORTS

Case 1: A 16-year-old girl was admitted to the emergency hospital, drowsy but not in serious danger after having taken a box of "sleeping pills." Recovered in a few days, she related that she had stayed out very late with a boy and had had several drinks but "nothing really happened." The next morning, awaking depressed and believing she would be expelled from her home and school because of her conduct, she had taken the sleeping pills to kill herself.

The girl's parents were invited for a chat over a cup of coffee with a member of the health department. They readily agreed not to punish their daughter, spontaneously mentioned that they had not spent sufficient time with her, and said that they ought to know more about the process of "growing up and away." The girl returned to school when recovered from her illness.

Follow-up was not considered necessary in this case. As has been indicated, love affairs, particularly of a transient and adolescent nature, very rarely cause a successful attempt at suicide.

Case 2: A 23-year-old woman was admitted to the emergency hospital with a self-inflicted cut on the wrist. Blood transfusion and repair of a tendon were required. Some days after she was discharged from the hospital "in good health" a public health nurse visited the patient's home and found her in a daze. There were liquor bottles on the floor; the patient stated that her mother had drunk the liquor. By questioning, the nurse learned that the home had always been unhappy, the mother alcoholic, the father ineffectual. The patient had also drunk excessively at times. She had made many attempts to break away from home, but had always returned since it was the only place where she received any affection, however seldom. When her mother had abruptly told her that she was "only" an adopted daughter, that her parents were certainly under no obligation to care for her any longer, and that she could go where she pleased, she had roamed the streets all night before cutting her wrist.

After a few interviews it was decided that more intensive psychotherapy was needed than the health department could provide. Ambulatory treatment was suggested, but the patient felt that she could not stay out of trouble if she remained at home. She was induced to apply for voluntary admittance to a state mental hospital where she was treated for a few months. When last seen she was in good spirits and apparently intended to care for herself.

In this case follow-up appears necessary and rehabilitation difficult. Domestic trouble coupled with alcoholism causes a large proportion of attempts at suicide with a relatively high rate of success.

Case 3: A boy whose mother died when he was a young child grew up in the care of his father, a stern and busy man who did not respond to the boy's need for dependence. At an early age the boy began to worry about his health and when sent to a boys' school felt he was not strong enough to compete in games. Complaining at school about his health, he was given a routine physical examination and was told that "everything was all right." He felt, however, that his health was becoming steadily worse although he found it increasingly difficult to express his feelings. On growing older he was disturbed by a recollection that he had been told on one occasion his blood pressure was "a little high" and on another occasion that it was "a little low." He began to smoke heavily and a moderate cough developed. Worried about the cough, he was not reassured when told that a chest x-ray film showed no disease. When at the age of 45 years he lost his job, he felt that he was going downhill. He attempted to drown himself but was rescued by police.

The health department discussed the case with a private physician in whom the patient had confidence. Under the physician's care the patient seems to have learned to face life more realistically.

DISCUSSION AND RECOMMENDATIONS

It cannot be concluded, from the small number of cases in the somewhat unsystematic program here presented, whether the program is really of public health benefit. Nevertheless, it seems likely that while it is difficult to prevent first attempts at suicide, decisive action by community agencies may well prevent a large number of later attempts. Generally county hospitals and some private hospitals and other institutions welcome interest by the health department in cases of attempted suicide, as they have no facilities for follow-up in these cases.

As the health officer in many communities is on the staffs of local county and private hospitals, usually as a consultant in communicable diseases, it may be wise to expand his duties to the field of mental health. As a member of his local medical society, the health officer may be instrumental in promoting understanding among physicians as to the importance of ill health as the leading motive for suicide.

If, for a period of one year, it were required that all attempts at suicide be reported like reportable diseases, patients recovering from such attempts could be asked to participate in a control program which would extend to a follow-up of perhaps ten years. In that length of time it would be possible to determine whether such follow-up had a significant effect on the death rate. Probably most physicians would be willing to participate in a program to decrease not only deaths but also the serious economic loss and disruption of families caused by suicide. It is hoped that this suggestion will be given serious consideration; but even without such a program on a statewide basis it seems certain that individual physicians could do much more than to regard persons who have attempted suicide as mere nuisances who disrupt hospital routine and who are to be dismissed as soon as effective first aid has been given.

Half an hour ago someone in the United States committed suicide. Another has done so as these words are read; the average is a suicide every 30 minutes. These two persons are dead, and no further follow-up can help them. They have failed society, and society has failed them. But in the same half hour another 20 persons have attempted suicide. Now their stomachs are being emptied, wounds are being repaired, bullets extracted. These patients will be dismissed in the hope that they will never return. Some, however, will attempt suicide again and fail again; others will be among the yearly 22,000 persons who kill themselves in the United States. That number, incidentally, is almost exactly the number of American soldiers killed in Korea in three years of war. It behooves physicians, both professionally and as citizens, to learn how to help persons who might commit suicide.

Court House.

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A Controlled Technique for Vein Stripping

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• A number of difficulties encountered in vein stripping operations for varicose veins in the legs have been overcome by use of a technique evolved by adaptation and modifications of various reported methods.

The stripping instrument is passed from below upward, the valves or branches offering less impediment to its passage in that direction.

Inserting the tip of the instrument at the ankle through an incision in the vein while it is still in continuity is easier than introducing it into the end of a transected vein. Ligation of major superficial branches or subfascial division of communicating veins can be readily carried out while the stripper is still in place in the vein.

Applying pressure bandages to the entire length of the leg before removing the stripper and the telescoped vein diminishes the chances of ecchymosis yet does not hinder withdrawal of the instrument and the vein.

FROM A COMBINATION, adaptation and modification of methods reported by other surgeons, the authors have developed a technique of intraluminal stripping of the saphenous vein in treatment of varicosities that is relatively easy to perform and that obviates a number of difficulties that were encountered in various cases.

Stripping alone is considered less than adequate treatment for varicosities of the lower extremities, but it is believed that, with the technique of controlled operation here described, it is possible to carry out at the same time other more radical procedures such as those advocated by Linton,[4] Sherman[7] and Wassell and Ettinger.[6]

When the authors first began to do vein stripping early in 1949, using the accepted technique of high ligation and then insertion of the stripper through the divided upper portion of the saphenous vein, often a good deal of time was spent in passing the stripper distally. Frequently it was impossible to force the stripper beyond the knee, necessitating an incision for removal at that point and reinsertion for further passage to the ankle. So much time was taken by these procedures that often when both legs had to be treated the operation was excessively long. On many occasions the stripper either would not pass some of the valves or would enter one of the relatively major branches and have to be freed and redirected along the main tributary. The main features of the technique that was worked out to surmount these difficulties are the routine practice of stripping from below upward (a procedure that has been described by De Takats and Fowler[2] and Kutz and Hendricks[3]) and control of pressure while applying traction to the stripper. It has been in use since mid-1950.

PREOPERATIVE MANAGEMENT

When examination and employment of the routine tests for competency of the saphenous vein and the communicating branches have been completed and an operation indicated, the patient is instructed to use one of the hexachlorophene soaps faithfully for a week before the operation, maintaining a cleansing lather for at least six minutes daily. In addition the patient is requested not to use elastic bandages within the last three days before operation, in order that the varicose veins may become fully distended and the marking of "blowouts" and of the major branches to be divided be made easier. The evening before operation, after the operative area has been thoroughly shaved, hexachlorophene soap is again freely used to cleanse the extremities and groin.

With the patient in a standing position, the skin over the general course of the vein and the branches and communicating vessels that are to be treated is marked with Berwick's dye or gentian violet solution. When the patient is in the surgery, before operation is begun the areas previously marked are scratched so that adequate markings will remain even should the dye be washed away during the preparation of the leg.

As is advocated by Adams,[1] a board is placed under the mattress across the foot of the operating table, the ends of the board extending about a foot on each side to facilitate changing the position of the extremity during operation. Pontocaine intraspinally or sodium pentothal intravenously, supplemented by nitrous oxide and oxygen, is used for anesthesia.

OPERATION

The authors use the oblique incision in the inguinal crease, developing it by sharp dissection until the saphenous vein is located. Then careful sharp dissection and some blunt dissection are performed within the sheath of the vein until all the branches near the saphenofemoral junction are isolated, divided and ligated with triple-0 silk. Frequently, to obtain better visualization of posteriorly placed branches, the vein is divided between clamps about 5 cm. distal to the saphenofemoral junction.

When all of the branches have been divided and the saphenous vein has been freed to its union with the femoral vein, a ligature of double-0 silk is placed at the juncture and a transfixion suture of the same material is placed distal to the ligature. If the vein has not been divided previously, division is carried out at this time. The wound is then flushed with warm saline solution and covered with a towel and attention is shifted to the ankle.

The flexible Meyers instrument is used for stripping. Passing it from the ankle upward has been found easier than from the groin downward, and in most cases it has been readily threaded through the entire length of the vein. The angle of the branches and the valves seems to be such that retrograde passage is easier. After the stripper is threaded through, it is left in place while pressure bandages are applied. Then the stripper and the vein are withdrawn through the previously made inguinal incisions. This sequence of procedure obviates the necessity of maintaining hand pressure over the sides of the stripped veins and diminishes the possibility that bleeding will occur, as it might if the hands had to be moved for placement of pressure dressings.

Unless the conditions are such that a more distal stripping is necessary, an incision is made just anterior and superior to the medial malleolus, and the distal portion of the saphenous vein is located and freed from the surrounding structures. Two ligatures of double-0 silk are placed around the vein and the distal one is securely tied. The first knot is made in the proximal ligature but is not cinched down on the vein until the stripper has been passed. In the segment of vein between the two ligatures, a transverse incision is made and one or two mosquito clamps are placed on the cut margins to permit easy opening of the incision for insertion of the stripper. It has been found to be much simpler to insert the stripper in a vein that has been incised in continuity (Figure 1, B) than through the cut end of a vein that has been transected. The tip of the stripper—the "olive"—is inserted and passed upward for a distance of 3 to 5 cm. and the proximal ligature is snugged to retard bleeding from the open stoma but

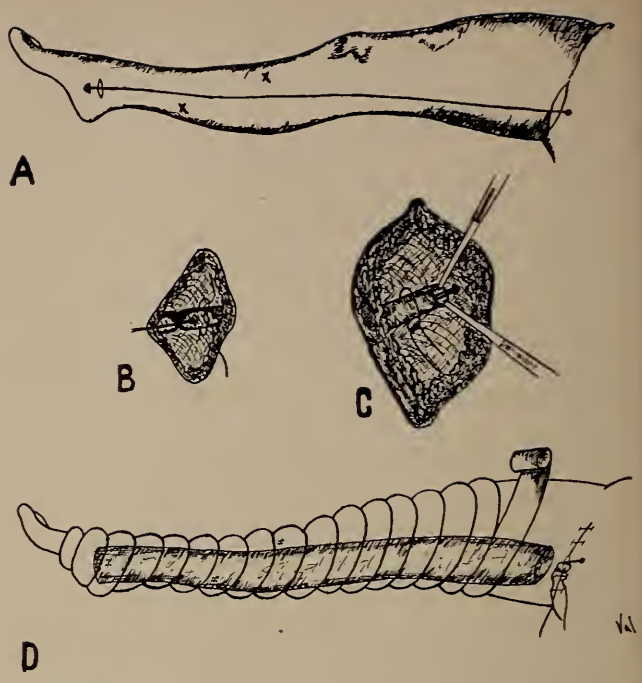


Figure 1.—*A*, stripper in vein before it is tied in place at the ankle. Marks on the leg indicate additional branches to be ligated. *B*, stripper passed through transverse incision in vein near medial malleolus. Vein tied off distally, loosely tied proximally over stripper. *C*, small "olive" tip of stripper emerging through distal cut end of saphenous vein in the thigh. Small hemostats grasp vein edges. Ligature is loosely tied until stripper has been withdrawn to the desired distance. *D*, all wounds have been closed except for one suture which has not been tied at site of emergence of stripper. A rolled bath towel and biased stockinette pressure dressings have been applied and stripper is ready for removal with avulsion of its enclosing telescoped vein.

is still not tightened completely lest passage of the stripper be impeded. The instrument is threaded upward toward the groin. Usually this can be done with relatively little manipulation of the leg and external pressure over the vein.

When the tip of the instrument is felt in the upper saphenous vein at the site of previous division, a ligature of double-0 silk is placed around the vein. The clamp at the cut margin is not removed. Only the first knot is made in the ligature and it is not cinched too tight. Two small mosquito forceps are placed at the edges of the cut portion of the saphenous vein to anchor the free end above the Mayo clamp (Figure 1, C). The clamp is then removed and as the stripper is forced out of the vein, the knot of the ligature is drawn tight. The stripper is withdrawn until the bulb at the distal end reaches the point where the vein had been incised at the ankle. The distal ligature is then tied tight and reinforced with an additional ligature. Division of the ankle vein then is carried out.

The tip of the stripper that has been drawn up through the saphenous vein at the groin is pulled until the distal bulb and telescoping vein have been

drawn upward for a distance of 2 to 3 cm. from the edge of the incision. The ligature around the superior portion of the saphenous vein is then tied tight and reinforced. The incision at the ankle is closed with interrupted No. 36 steel wire sutures.

If further operation is required, the authors do it while the stripper is still in place. In many cases the larger tributaries are ligated and in some cases it is necessary to carry out subfascial division of the communicating branches. If it is necessary to make an incision the full length of the lower leg for adequate exposure of the communicating veins, this can be done with the stripper still in place in the saphenous vein.

After it has been irrigated with warm saline solution, the wound in the groin is closed, with triple-0 silk used for the thin fascial layers and No. 36 stainless steel wire for the skin. One suture in the skin at the point where the stripper is emerging from the wound is left untied until later.

Before the stripper and the vein which encloses it are removed, the leg is elevated for a short time to permit as much blood as possible to pass from the superficial to the deep veins. Then, with the leg still elevated, pressure bandages are applied. Placing a rolled bath towel longitudinally over the course of the saphenous vein and applying biased stockinette bandage over it (Figure 1, D) maintains adequate pressure. After bandage has been wrapped from the foot to the groin, the leg is put in a horizontal position and the stripper is pulled out with the vein telescoped upon it. (Rarely in the author's experience has inversion of the vein occurred during its removal.) This done, an assistant holds pressure at the groin while the suture that was left untied is knotted to complete the closure. Then another roll of biased stockinette is added for additional pressure from the toes to the groin. With this system, ecchymosis is minimal.

POSTOPERATIVE CARE

Ambulation is encouraged on the operative day and the heavy pressure bandages are kept in place for three days. After they are removed, similar pressure is maintained for another three or four days, without so much bulk, by placing perineal pads over the course of the vein and applying either stockinette or elastic bandages to hold them in place. Then the patient wears elastic bandages from the knee to the toes for a two-week period. Sutures are removed seven to ten days after operation in most cases, but occasionally the wires are left in place for 12 to 14 days if healing is not satisfactory.

DISCUSSION

Although not enough time has elapsed for follow-up studies adequate for definite evaluation, results obtained with the technique described have been quite satisfactory thus far. Since they have been using it, the authors have less often resorted to longitudinal incision and subfascial ligation of the communicating vessels, preferring to wait and do local operation for ligation of communicating vessels that perforate, which seldom has happened.

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The Removal of Stones from Low in the Ureter

A Report on an Improved Method

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• *Extraction of stones from the lower part of the ureter can be facilitated by use of a long filiform which permits the attachment and introduction of dilating Phillips catheters of increasing caliber and of various stone extractors. The filiform must be left in place, with the tip superior to the stone, until the ureter has been successfully dilated, the stone extracted and a drainage catheter inserted. The filiform serves to guide the instruments up the ureter.*

Smooth muscle relaxation, or "tone paralysis," is achieved by leaving each dilating catheter in the ureter for at least ten minutes.

A combination of spinal and local anesthesia is used, and this contributes further to the desired ureteral relaxation. This simple method was used successfully in 34 of 35 consecutive cases to remove a stone in the lower part of the ureter.

THE SUCCESSFUL REMOVAL of a stone from the lower part of the ureter depends largely on the completion of several steps, principally (1) getting the necessary instruments to pass up the ureter past the stone, (2) dilating the ureter below and adjacent to the stone and (3) engaging the stone in a "stone basket." A method to simplify the removal of stones from this part of the ureter has been developed and used to advantage in 34 cases. It depends in part upon a means that has been found to bring about relaxation of the ureter ("tone paralysis"), making dilatation of the ureter with catheters and removal of the stone very simple. No special instruments are required; those employed — a long filiform with straight, bent or curled tip, Phillips catheters in sizes 8, 10, 12 and 14 F. and a Johnson basket or Council stone remover—are those commonly used by urologists. A looped filiform (Palmer) has occasionally also been found useful.

TECHNIQUE

Through a panendoscope, a No. 4 filiform (from a Phillips catheter and filiform set) is passed up the ureter beyond the obstructing stone. During subsequent dilatation of the ureter and removal of the stone the tip of the filiform is never brought down below the stone. A No. 8 Phillips catheter is screwed securely into the head of the filiform, and the tip of the catheter is gently passed up beyond the stone in order to dilate the segment of the ureter containing the stone (Figures 1 and 2). The catheter is left in place for 10 minutes. This catheter is then withdrawn, leaving the tip of the filiform superior to the stone, and is replaced by a No. 10 Phillips catheter. This is attached to the head of the filiform, passed up the ureter above the stone and permitted to remain there for 10 minutes. Then a No. 12 catheter is similarly used. If the stone is particularly large it may be necessary to use a No. 14 catheter to dilate the ureter further. Permitting each catheter to remain beyond the stone for ten minutes is an integral part of this procedure.

After the ureter has been sufficiently dilated and relaxed, either a Johnson basket or a Council stone remover is threaded into the head of the filiform, the tip of which still lies above the stone. The extractor is gently passed up to engage the stone in the basket (Figure 3). Either of the two kinds of extractor may be passed several times or they may be interchanged, as long as the tip of the filiform remains in place. Should the stone still not be engaged, as sometimes it is not when the ureter is greatly dilated, the looped filiform (Palmer) is passed and worked up the ureter well beyond the stone. This then becomes an Ellik loop and is handled as Ellik[3] recommended. After the stone has been removed, the filiform is not taken out of the ureter until a drainage catheter has been passed up the ureter. This drainage catheter, left in the ureter for 72 hours, serves to drain the kidney and to splint the injured ureter. Use of the drainage catheter is the only way to insure complete control of urinary drainage after the stone has been removed. If pain follows removal of the catheter it is reinserted for an additional 24 to 48 hours.

Long Filiform. The facility of the whole procedure depends on the use of the long filiform. It is an ideal instrument to insert beyond a stone in the lower part of the ureter. The tip is firm and may be either

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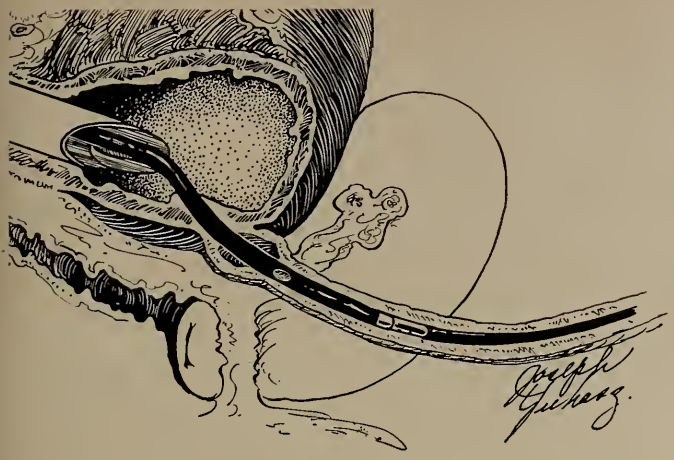


Figure 1.—With the filiform in the ureter above the stone, the catheter is being inserted into the ureter.

straight or bent. This filiform serves as a wedge for and a stable guide to the catheters and extractors used subsequently. The bent tip is especially useful in removing stones from the lower part of the ureter for it may be rotated to find the easiest place to press it past the stone. In 16 per cent of the cases in which the stone is lodged in the lower segment a ureteral catheter cannot be made to pass.[4] When the filiform, which tapers at the tip to a fine gauge, passes beyond the stone, it curls in the renal pelvis and does not penetrate (Figure 3). Nation[5] reported one case in which he used the long filiform with a stone extractor to determine whether or not the stone was engaged at the first attempt.

Looped Filiform. Near the end of a No. 4 Phillips filiform a strand of No. 34 silver wire is attached by means of a whipping knot.[1] A short distance from

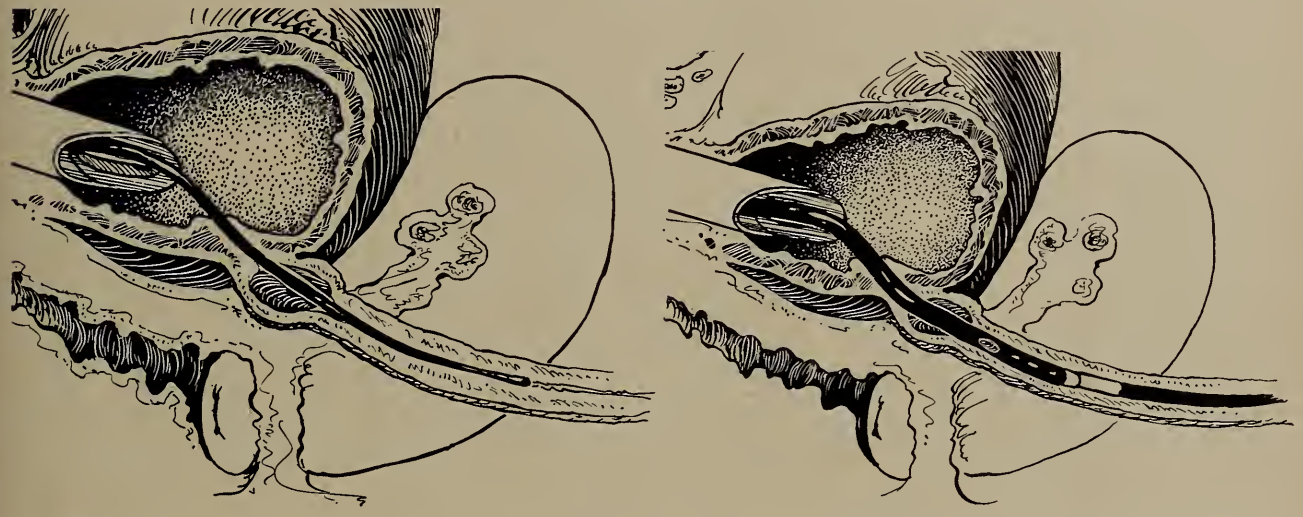


Figure 2.—*Left,* insertion of the filiform. *Right,* filiform and dilating catheters above the stone. Successively larger dilating catheters are introduced and each is left in the ureter for ten minutes to bring about "tone paralysis."

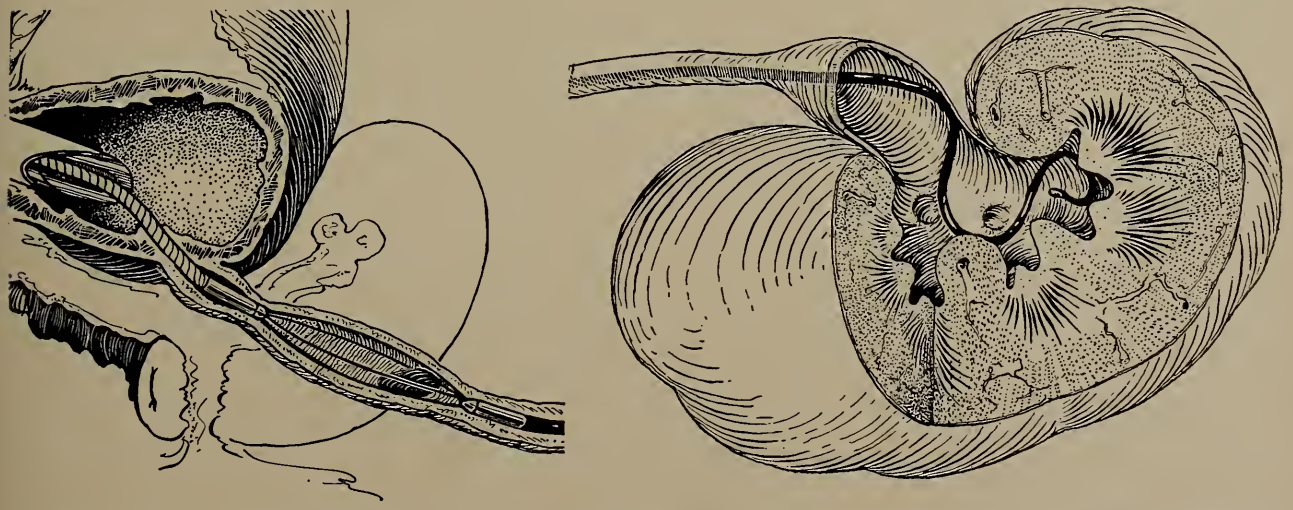


Figure 3.—*Left,* with the stone extractor attached to the long filiform, the stone is being removed. *Right,* position of the filiform when catheters and extractors have been inserted into the ureter.

the tip, the wire runs back along the filiform. When tension is applied to the wire an Ellik loop[3] is formed and this is used to engage the stone. This is useful when, owing to dilation and atonicity of the ureter, the stone is difficult to engage in an extractor.

Anesthesia. Spinal anesthesia was used in all 35 cases. In addition, local anesthesia is induced by injecting 4 ml. of a 4 per cent solution of metycaine into the ureter proximal to the stone through a Phillips catheter. This promotes further relaxation of the ureter.

DISCUSSION

Introducing dilating catheters into the ureter has often been a troublesome step in the removal of stones. The tendency of the ureter to contract when catheters are repeatedly introduced is overcome, in the procedure described, by two measures: (1) When the long filiform is left in the ureter, it is mechanically much easier to introduce the dilating catheters and the extractors; (2) leaving each catheter in the ureter for ten minutes relieves the contraction or spasm of the ureter.

The advantage gained by leaving the catheter in the ureter was discovered accidentally: In the course of removing a stone low in the ureter, the first catheter had been passed above the stone, but the second was wedged between the stone and the first catheter and could not be pushed farther with reasonable force. The procedure was unavoidably interrupted at this point, the patient was left temporarily under the care of an attending nurse, and the cystoscope was left in place for 15 minutes. When another attempt was made at the end of this time, the second catheter could be inserted without pressure, and the third catheter could easily be passed. In this instance ureteral spasm had apparently been overcome by permitting the ureter to contract on the two dilating catheters for a short time. From this it appeared that dilatation of the ureter ought not be immediate and forceful, as has been customary,[2, 6] but gradual and prolonged to overcome spasm and obtain smooth muscle relaxation. The relaxation obtained by this means is sufficient to warrant the term "tone paralysis." The extractor passes remarkably easily through the relaxed ureter.

In one case in which the method was used, an accident caused complications. When a No. 10 Phillips catheter, attached to a previously inserted filiform, was being passed, the catheter broke near its tip, leaving the filiform and the attached piece of catheter above the stone. Laparotomy was carried out at once, and the filiform, the fragment of catheter and the stone were removed. Recovery was uneventful.

The stones were not delivered immediately into the stone basket in all cases. In three cases, although the stones were engaged, they were so large or so jagged that it was necessary to deliver them gradually over a period of one to four days. The stone was lost in four cases, possibly crumbled by pressure of the ureteral orifice on the basket during extraction. Ellik[4] reported similar experience. In five cases the stone was intentionally left in the bladder when it fell from the stone basket there after extraction from the ureter. In all cases postoperative x-ray films did not show the previously visualized ureteral shadows. In 34 of the 35 consecutive cases the stone was removed from the ureter by a single cytoscopic manipulation.

One of the patients, a 69-year-old man, died of a cerebrovascular accident on the sixth postoperative day. The stone had been successfully removed and he had been free of symptoms referable to the urinary tract.

Whether or not to dilate the ureters after this procedure is difficult to decide. If the stone was large and there is danger of postoperative ureteral stricture and hydronephrosis, it is probably advisable. In most of the cases in the present series a No. 6 ureteral catheter was passed within a month following the extraction to learn the condition of the ureter. In many of them a pyelo-ureterogram was made. There was no evidence of ureteral stricture or dilatation. It seems unnecessary to carry out such procedures postoperatively in every case.

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Autopsy Reports of Pulmonary Carcinoma

Survey in Los Angeles County Hospital for 1951

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• *Of the 1,972 deaths investigated by autopsy at the Los Angeles County Hospital in 1951, 64 were attributed to bronchogenic carcinoma. However, in some of these cases the protocols did not contain sufficient data to substantiate the diagnosis or the tissue specimens were not conclusive evidence.*

Although the survey left no doubt that the lung was the most common site of primary carcinoma in the series studied, a wider application of the findings is limited by the facts that patients with bronchogenic carcinoma are more likely than others to die in hospitals and that selection of cases for autopsy depends on the interest of the physician and the consent of the patient's survivors.

IN VIEW OF THE REPORT by Steiner and co-workers[5] in 1950 noting the increase in deaths from bronchogenic carcinoma in the Los Angeles County Hospital (and of similar reports from other parts of the United States[1, 4]) it seemed advisable to review carefully the autopsy reports at that institution for a more recent calendar year to determine the number of deaths attributed to cancer of the lung.

MATERIALS AND METHOD

The material for the study was obtained from records of 1,972 consecutive autopsies done at the Los Angeles County Hospital in 1951. All cases with the anatomical diagnosis of bronchogenic carcinoma were studied and the autopsy protocols and microscopic slides examined. Cancer of the lung was listed as a diagnosis in 71 cases, but in seven of these the tumor was thought to have originated elsewhere in the body or to be not the primary cause of death.

Of 380 deaths resulting from cancer, therefore (19.3 per cent of all cases studied), 64 or 16.8 per cent were attributed to bronchogenic carcinoma.

RESULTS

Of the 64 cases, 47 were in males and 17 in females. The average age for both sexes was 63 years. Thirty-five of the patients had lived in Los Angeles County between 3 and 56 years, the average residence for these being 19.4 years.

The incidence of bronchogenic carcinoma as compared with that for cancer in several other common sites in the material studied is shown in Table 1.

DISCUSSION

The present study is in agreement with the opinion of Weller[6] on the inherent weakness of statistical studies of this nature. He stated: "As is true of all cancer statistics, those dealing with primary carcinoma of the lungs and bronchi are of value only to the extent that the material units have been critically selected. The authenticity of the individual case is the crucial test. Obviously, only those reputed examples of primary carcinoma of the lung are of value on which a complete autopsy has been done. Certainly, too, there must be microscopic verification of each case, if results are to be fully accepted. . . . Doubtful cases should be excluded from collected series. . . . Also, those examples in which multiple separate masses of carcinoma are found in both lungs and primary carcinoma is not observed elsewhere, are best interpreted as instances of hidden primaries. In studies which are only statistical, the reader is at a loss to know how critical the compiler may have been in selecting his original units. . . . There is still need for statistical studies based on carefully selected and fully authenticated cases of carcinoma of the lung." Many of the protocols reviewed for this

TABLE 1.—*Comparison of incidence of bronchogenic cancer with that of other cancer—1951*

	Total No.	Per cent of all cancers
Bronchogenic carcinoma	64	16.8
Bowel (small and large including rectum)	44	11.6
Stomach	38	10.0
Leukemias and lymphomas	30	7.9
Pancreas	27	7.1
Bladder	20	5.2
Intracranial tumors	18	4.7
Prostate	17	4.4
Breast	17	4.4

From the Tumor Tissue Registry of the Cancer Commission, California Medical Association, and the Los Angeles County Hospital.

The photography was done by Edward Hamilton, College of Medical Evangelists.

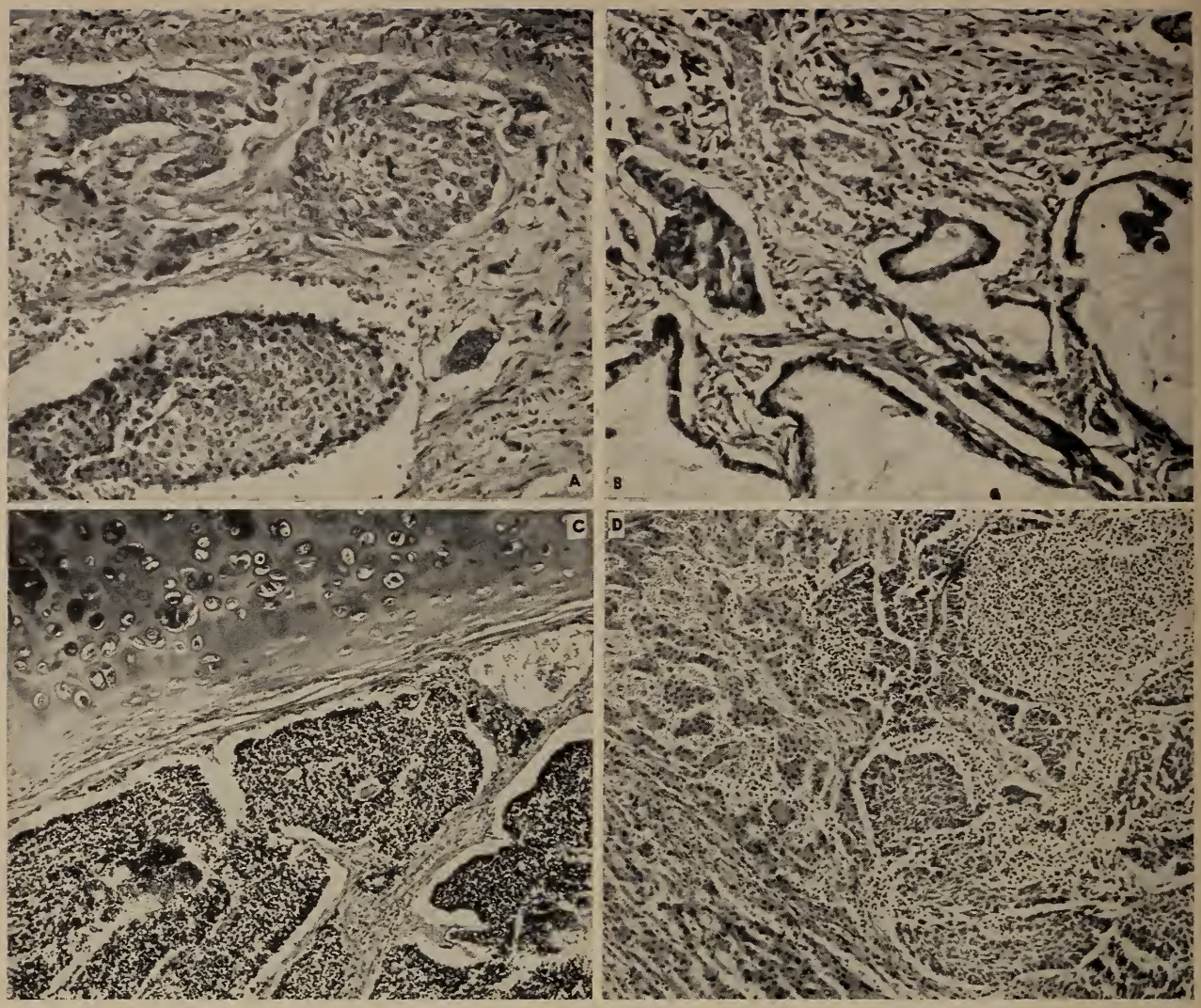


Figure 1.—These microscopic sections illustrate the apparent tendency of bronchogenic carcinoma to vary in histologic pattern. *A*—An area of squamous carcinoma. *B*—An area of adenocarcinoma from same block of tissue as *A*. *C*—Typical "oat-cell" tissue. D—Liver metastasis from tumor shown in *C*. Note epidermoid areas.

study, together with the microscopic slides, contained adequate evidence to support the diagnosis of primary bronchogenic carcinoma, but some, although the condition reported may have been cancer of the lung, were not sufficiently documented to substantiate the diagnosis.

A shortcoming was the lack of definite statements as to how carefully the gastrointestinal tract, breasts, thyroid gland and other possible sites of cancer were examined and excluded. Probably the greatest lack in this respect was with those cases classed as adenocarcinoma. Of seven protocols on cases in females, six did not report on examination of the breasts, and in four no breast tissue was available for microscopic study. Many of the microscopic slides were inadequate because the tissue had not been taken from a representative site. In only two instances in the microscopic material available for study was the origin of cancer of the lung traceable to the bronchial mucosa. In other instances, fixation was so poor that the possibility of neoplastic lesions other than bronchogenic carcinoma could not be definitely excluded. It is therefore more than a possibility that some of the lesions included as primary bronchogenic carcinomas were in fact tumors of other origin.

TABLE 2.—*Classification of bronchogenic carcinoma observed in autopsy series*

Epidermoid	18
Anaplastic	31
(Undifferentiated 13)	
(Giant and spindle 6)	
(Oat cell 12)	
Adenocarcinoma	10
(Alveolar cell carcinoma 2)	
Mixed	5
	64

In study of the slides the 18 specimens of epidermoid cancer (see Table 2) were easily classi-

fied. The 31 specimens of anaplastic cancer were subdivided as "undifferentiated" (13) "giant cell and spindle cell," (6) and "oat cell" (12). This division is perhaps unnecessary but was helpful in the study of these tumors. The undifferentiated sub-group ranged from those which had extensive dermoplastic reaction and resembled tumors frequently seen in the breast, to those with large sheets of cells in which the cells were larger and had more cytoplasm than is typical of "oat-cell" carcinoma. (The latter term is unsatisfactory because of the variance of interpretation as to what constitutes an "oat cell." It is used nevertheless to indicate a certain type of cancer of the lung with slightly spindle-shaped, small cells.) The bronchogenic carcinomas of "giant-and-spindle-cell" type were extremely pleomorphic with varying amounts of both components. The "mixed" group included tumors in which there was a mixture of any two or more of the main histologic types in the lung itself. In studying the metastatic lesions, additional patterns were noted. In two cases of typical anaplastic (oat-cell) carcinoma there were definite squamous areas in the metastatic growths (Figure 1).

Despite the previously mentioned shortcomings in autopsy reports, a great number of cases were very typical both in history and in microscopic appearance of excised material, and it can be stated without a doubt that among cases in which autopsy is done at the Los Angeles County Hospital, the lung is the most common site of primary carcinoma. This does not mean that it is the most common carcinoma occurring in patients in this area. Patients with bronchogenic carcinoma, as has been shown, have a very short life expectancy after diagnosis, in contrast with patients having other common kinds of cancer,[2] and are therefore more likely to die in the hospital than those with other tumors, such as cancer of the breast or of the stomach. Another factor may be the selection of cases for autopsy, as permission for autopsy is usually sought in the more interesting and less obvious causes of death. In Los Angeles vital statistics for the year 1950,[3] primary malignant neoplasm of the lung was listed as the cause of 5.9 per cent of all deaths from cancer; in another 3.3 per cent the cause was listed as cancer of the lung, but whether primary or not was not stated. Cancer of the stomach was the cause of death in 11.2 per cent of the deaths from cancer, and in 11.4 per cent it was cancer of the breast.

CONCLUSION

Bronchogenic carcinoma is the outstanding cause of death from cancer among cases in which autopsy is done in the Los Angeles County General Hospital. To ascertain the true proportion of death from primary cancer of the lung in the population at large, it would be necessary to have autopsies on a reasonable segment of the population, and in no case could death be attributed to bronchogenic carcinoma unless all other reasonably possible primary sites were examined and exculpated.

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Rupture of the Gastrointestinal Tract

Dealing with Lesions Caused by Non-Penetrating Trauma

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• The possibility of rupture of the gastrointestinal tract should be considered in every case of abdominal trauma, and the patient should be carefully observed for a period of 12 to 48 hours. There are many factors that may confuse diagnosis, but in the presence of persistent pain and tenderness, persistent or recurring shock, fever, leukocytosis, roentgen demonstration of free intra-abdominal air, or of other signs of peritonitis, operation should be carried out. The mortality rate is much higher when definitive treatment is delayed more than 12 hours.

RUPTURE OF THE gastrointestinal tract by a blow to the abdomen without penetrating trauma is frequently overlooked or misdiagnosed. There are several reasons for this: (1) The usual period of relative quiescence or even of improvement before the major symptoms develop, particularly in the case of rupture of the small bowel; (2) the difficulty in interpretation of the signs and symptoms when they do occur; (3) the overshadowing of these signs and symptoms by associated injuries. This combination of circumstances is reflected in a high mortality rate—from 34 to 73 per cent in reports of various series totaling more than 1,600 cases.

Abdominal trauma causes approximately 1 per cent of all traumatic deaths. Rupture of the small bowel following non-penetrating trauma is ten times as frequent as the usually more readily diagnosed ruptures of the stomach, colon, biliary and pancreatic tracts.[11] Since the injury usually occurs in the course of some strenuous occupation, the incidence is far greater in males.[6]

While more than 99 per cent of the cases of abdominal trauma seen by the Second Auxiliary Surgical Group in World War II were due to penetrating wounds, in civilian life abdominal injuries are more often caused by non-penetrating trauma, as they were in 86 per cent of cases observed at Massachusetts General Hospital.[17]

MECHANISM

There are four main types of accidents in which rupture of the gastrointestinal tract due to non-penetrating trauma occurs:

1. Transportation accidents in which many forces may be applied simultaneously against a fixed object or against an object moving in the opposite direction.

2. Personal encounter accidents in which the subject is struck, kicked or falls on his abdomen.

3. Industrial accidents in which a blunt object such as an iron bar, timber or the like may strike the abdomen with considerable force.

4. Hernia accidents in which the hernia appears to predispose to rupture of the bowel either due to direct force to the bowel lodged in the hernial sac or by indirect force transmitted through the abdomen from the abdominal wall.[1]

Because of the mobility of most of the gastrointestinal tract, sharp, sudden blows are more likely to cause rupture than is slowly applied pressure.

There are three chief mechanisms by which non-penetrating trauma of the abdomen may produce gastrointestinal rupture. Most frequently such rupture results from a crushing injury in which the external force compresses the bowel against the spine or pelvic bones. Occasionally tearing injuries may result from a violent force applied at a tangent to the body. Bursting injuries of the normal gastrointestinal tract are rare. However, that distention of the gastrointestinal tract with food, fluid or gas may predispose to rupture is evidenced by the fact that in many of the cases rupture occurred soon after a meal.[16] The momentary formation of a closed loop makes the bowel more vulnerable.[11]

RUPTURE OF THE STOMACH

Rupture of the stomach is rare owing to the mobility and elasticity of the organ and the protection afforded by the rib cage. Symptoms and findings are those of perforated peptic ulcer and are usually of rapid onset. In more than 80 per cent of the cases free air may be observed in x-ray films taken with the patient in the upright or the lateral decubitus

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position. Vomiting with blood in the vomitus may occur. Preexisting pathologic change may predispose to gastric rupture.

RUPTURE OF THE SMALL BOWEL

In rupture of the small bowel, the site is more often the ileum than the jejunum. The commonest sites are in the first two feet of jejunum and the terminal three feet of ileum, where the bowel is either firmly fixed to the posterior abdominal wall or has a short mesentery.[3] Rupture occurs about as often at the mesenteric as at the antimesenteric border. Although usually small, large ruptures sometimes occur, and occasionally complete transection. Multiple perforation occurs in about 10 per cent of cases.[1]

The duodenum is well protected except for the third portion where it lies on the spine,[2, 8] and thus the incidence of duodenal rupture is much lower than in the rest of the small bowel. Most often it takes more severe trauma to injure the duodenum than it does to cause rupture elsewhere in the small bowel. Hence duodenal injury very often is accompanied by other traumatic lesions such as rupture of the solid viscera.[6, 12, 14] One-third to one-half of duodenal ruptures are retroperitoneal.[7]

SYMPTOMS OF RUPTURE OF THE SMALL BOWEL

The most frequent and only constant symptom of rupture of the small bowel is abdominal pain with tenderness and rigidity, moderate at first but progressive and persistent. However, the pain may be localized to the site of injury and perhaps be elicited only by deep palpation, as it is occasionally in rupture of the proximal duodenum.[11] The next most frequent symptom is vomiting which is present in less than 50 per cent of cases.[11] A persistently rapid or steadily increasing pulse rate or leukocytosis should probably be considered of equal or greater importance. Roentgenographic evidence of air beneath the diaphragm or in fine bubbles in the retroperitoneal space is present in less than half of the cases[3, 9] as is external evidence of abdominal trauma.[11] The patient often has an anxious facial expression and may be unusually restless.

In the majority of cases there are no localizing signs or symptoms for the first three to 12 hours or, in cases of duodenal injury, even 48 hours—the first symptoms being those of peritonitis or retroperitoneal cellulitis. Rupture of the intestine is the commonest cause of peritonitis after abdominal trauma and, conversely, peritonitis is the commonest clue to the diagnosis of rupture of the intestine.[4] Diaphragmatic irritation with pain referred to the shoulder may be present.

There are numerous reasons for the lack of pathognomonic symptoms in rupture of the small bowel. Among the confusing factors is the high coincidence of other severe injuries such as multiple fractures and cerebral trauma, and complications such as alcoholic intoxication.[10] Moreover, usually there is a period of delay before the onset of symptoms, often with considerable improvement and recovery from the initial traumatic shock, particularly if the rupture is retroperitoneal.[2, 6] Other reasons for delayed appearance of signs and symptoms, as cited from Zachary Cope by Penberthy[9] and Poer,[10] are: (1) Delayed rupture with spillage occurring through a sloughing, gangrenous area in the bowel due to a severe bruise or to avulsion of the blood supply; (2) delayed massive contamination of the peritoneal cavity because of paralytic ileus; (3) mechanical prevention of leakage and peritoneal contamination by the plugging of the opening by the edematous mucosa or by the contraction of the circular musculature of the divided bowel.

DIAGNOSIS

The diagnosis of ruptured small bowel should be considered whenever a patient with a history of abdominal trauma, in whom chest and kidney lesions can be excluded, has one of the following:

1. Signs of early peritonitis evidenced by persistent and increasingly severe abdominal pain, present more than six hours after injury, and accompanied by vomiting, by persistent local rigidity tending to extend or by deep local tenderness with shallow respirations.

2. Signs of impending vasomotor collapse in the presence or absence of abdominal pain as evidenced by tachycardia, decreasing blood pressure, diaphoresis and pallor in the absence of increasing anemia.

3. Signs of late peritonitis evidenced by increasing fever and leukocytosis, generalized abdominal tenderness, rigidity, and distention with decrease in dullness to percussion over the liver, shifting dullness in the flank and tender pelvic peritoneum by rectal examination.

4. Roentgen evidence of subdiaphragmatic or retroperitoneal free air.

In differential diagnosis attempt must be made to rule out the various conditions that can simulate rupture of abdominal viscera such as contusion or rupture of the kidney and extraperitoneal hemorrhage, paralytic ileus or acute gastric dilatation, certain spinal cord injuries, hematoma of the rectus muscle or hemothorax or pneumothorax.[1, 4, 9]

All patients with a history of abdominal trauma should be closely observed for a period of 12 to 48

hours with repeated examinations of the abdomen and repeated observations of pulse, blood pressure, respiration and hemoglobin and leukocyte content of the blood.[5] The mortality rate is twice as high when diagnosis is made more than 12 hours after injury as it is when definitive treatment is begun earlier.[3, 13] For that reason if there is strong suspicion of rupture of the bowel, the relatively slight risk of laparotomy should be weighed against the dangers of delaying operation.

PREOPERATIVE AND POSTOPERATIVE TREATMENT

Gastrointestinal tract suction by a stomach or small bowel tube should be begun before operation. Administration of blood and fluids by vein, before, during and after operation to restore electrolyte balance and hydration, and to combat shock, anemia and infection is extremely important. The rationale of the preoperative institution of antibiotic therapy in cases in which there is likelihood of infection would seem well founded.

If plastic peritonitis or the presence of bowel contents in the abdomen is observed at operation, perforation of a hollow viscus is a certainty. Even though one perforation may be located, thorough exploration of the abdomen must be carried out, for often there are multiple perforations and other intra-abdominal injuries.[7, 15]

Postoperatively, gastrointestinal suction should be continued until ileus is relieved. Blood, glucose, fluids, and amino acids should be given parenterally as indicated by anemia, shock, dehydration, infection or nutritional deficiency. Because of the likelihood of mixed contamination, antibiotics effectual against many kinds of organisms should be given. The patient should be kept in semi-Fowler's position and should be made to walk as soon as postoperative ileus and peritonitis have cleared. A daily examination for evidence of pelvic or subdiaphragmatic abscess should be made.

PROGNOSIS

In cases of rupture of the duodenum the prognosis is extremely poor.[6, 7] The incidence of fistula is high in patients who recover. When the injury is elsewhere in the small bowel, the prognosis is more favorable; but the lower the site of rupture, the higher the mortality rate.[3]

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Entozyme® in Treatment of Psoriasis

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• *Entozyme,® a pancreatic extract taken orally, was used in 36 cases of psoriasis previously recalcitrant to other treatment. In 24 cases this extract was the only treatment given, and good response occurred in 19 cases within 4 weeks to 3 months, with complete clearing in four cases. In 11 of 12 cases in which local treatment was supplemented by Entozyme, lesions cleared in 2 weeks to 3 months or longer.*

SEVERAL PANCREATIC EXTRACTS have recently been used with some success in the treatment of psoriasis. Lipocaic, a product of the pancreas (possibly a hormone) inhibits fat formation to the extent that injection of it into dogs after pancreatectomy prevents the abnormal fattiness of the liver which usually follows that operation. Becker and co-workers[1] reported two series of trials with lipocaic for psoriasis. They believed that effective treatment would depend upon keeping the lipid content of the serum at the lower end of the "normal" range. In the first series they observed definite improvement in four cases after injection of lipocaic but no response in two. Lipocaic was administered orally in the second series[2] to 23 patients who were observed for periods of from two to 18 months. The lesions cleared in 7 of the cases and there was some improvement in 12 but no change in 4. The expected reduction in lipid content of the serum did not occur, but the lesions cleared more rapidly in patients with low serum lipid content than in those with a high content.

Deproteinated pancreatic extracts containing no insulin, histamine, or acetylcholine were used by Downing and co-workers,[3] who reported beneficial effects in 50 per cent of cases. In these and other studies the emphasis has been upon replacing and supplementing enzymes normal to the metabolism of fat. No toxic reaction, renal damage, or abnormalities in the blood have been reported as resulting from the use of pancreatic extracts.

Entozyme,® a pancreatic extract with enteric coating in 0.5 gm. tablets, was used by the author in the treatment of 36 patients with psoriasis. The usual dosage was 3 to 4.5 gm. daily. For 24 patients at the Stanford Hospital clinic it was the only treatment except for placebos; for 12 patients in private practice it was used as an adjuvant to local treatment.

In all 24 patients treated with Entozyme only, the condition had been recalcitrant to all previous treatment. In four, good response was observed after four weeks of treatment; the cholesterol content of the blood in these cases was below 300 mg. per 100 cc. In 15 other cases there was good response after longer periods of treatment, up to three months. In 7 of these cases the cholesterol content was below 300 mg. per 100 cc. of blood and in 8 it was higher than that. In 4 of the 19 cases in which, sooner or later, good response occurred, the skin cleared completely; and in those 4 cases the cholesterol content of the blood was below 300 mg. per 100 cc.

Likewise recalcitrant to other treatment were the 12 cases in which local treatment was used in addition to Entozyme therapy. In all these cases the cholesterol content of the blood was below 300 mg. per 100 cc. The lesions cleared in two patients after two weeks, in three after four weeks, and in four within three months. In two, after more than three months of Entozyme and local therapy, involution of lesions was sudden and rapid.

Placebos were substituted for Entozyme tablets in five cases after improvement had occurred. They were given for periods of three to four weeks and in that time two of the patients had flare-up of disease, two had no change and one continued to improve.

There were few undesirable effects from the use of Entozyme. Two patients who stopped taking it because of gastrointestinal distress were able to resume it without further disturbance after it had been emphasized that the drug must be taken at the end of each meal. Four patients reported aggravation of chronic constipation. In two cases aggravation of psoriasis occurred during Entozyme therapy.

Results in so small a series are not conclusive, of course, for psoriasis is sometimes influenced by psychic factors or may abate spontaneously.

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Pseudomonas Aeruginosa Infections of the Eye

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• *Pseudomonas aeruginosa seldom invades the body except in persons or in organs lacking natural defenses, and usually the infection is chronic rather than acute, evoking little systemic response. When introduced into the cornea, however, as in penetration by a foreign body or in contaminated medicines, it acts with extreme virulence, in many cases causing blindness and even necessitating enucleation.*

Although many attempts at control of Ps. aeruginosa, even with powerful antibiotics, have been unsuccessful, polymyxin B appeared to have good effect and was tested in experimental infection of the cornea in rabbits.

It was demonstrated by preliminary studies in vitro that polymyxin B was effective against nine strains of Ps. aeruginosa which on inoculation caused rapidly progressive ulcers in the corneas of rabbits.

A strain of proved virulence was introduced into both eyes of each of 18 rabbits. The left eyes only were treated with subconjunctival injections at 48-hour intervals of a solution of polymyxin B, to which epinephrine was added as a vasoconstrictor to prevent rapid dispersion. The right eyes remained untreated as controls.

In five of the six rabbits treated immediately after inoculation, the treated eyes remained clear, while moderate infiltration developed in the sixth. In the six rabbits not treated for 24 hours after inoculation, ulcers developed but remained localized during therapy. In those not treated for 48 hours after inoculation, ulcers developed before treatment began but did not spread as rapidly as in the controls.

Hyaluronidase was added to the preparation for half the rabbits in each group but had no perceptible beneficial effect.

THE DEVASTATING EFFECTS of infection of the eye by Pseudomonas aeruginosa (Bacillus pyocyaneus) have received much comment in ophthalmological literature. The most common form of infection is corneal ulcer, which spreads with frightening rapidity to panophthalmitis. The infection often follows penetration of the cornea by a foreign body which becomes embedded there. The ulcer usually becomes necrotic and is resistant to ordinary therapy. A hypopyon forms and perforation occurs with resultant intraocular involvement. In the majority of cases loss of useful vision in the affected eye ensues or evisceration may be necessary.

Ps. aeruginosa has been reported as an uncommon cause of other infections of the eye and ocular adnexa. Jacobi[19] stated that the first published report (1885) of Ps. aeruginosa infection in the ophthalmologic literature was that of a case of dacryocystitis; he did not cite the reference. Terson[43] reported a case of dacryocystitis due to Ps. aeruginosa in 1895. Seven cases of conjunctivitis associated with Ps. aeruginosa have been recorded. Of these, five occurred in newborn infants,[46, 8, 17, 41] two in adults. The case reported by Derby[8] was associated with meibomitis. In 1943 McCulloch reported one case of meibomitis, one of endophthalmitis following iridectomy, and one of infection following trephining, all thought to be caused by Ps. aeruginosa.

The first report of a corneal ulcer due to Ps. aeruginosa was that in 1891 of Sattler,[38] who, after isolating the causative organism, stated: "If we now compare the depicted bacteria with some of the known bacterial species that have been identified we see that it offers by far the greatest agreement with the bacillus pyocyaneus. I have had the opportunity to make a number of corneal inoculations and hypodermic injections in rats and mice with several cultures that I obtained from the Institute of Hygiene and am now convinced that results agree to a very striking degree with the picture that I have described above." Since this first report, many cases of corneal infection have been published. Mauersberg (1910),[28] Jacobi (1912),[1] Morelli (1922),[30] Garretson and Cosgrove (1927),[14] and Joy (1942),[22] have presented excellent summaries of a total of 64 cases occurring prior to 1939. In the interval 1939-1952, an additional 40 cases have been noted.*

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This paper was one of three that received the certificate of award in the 1952 Schering Award contest.

Experimental studies reported upon herein were done at the Francis I. Proctor Foundation for Research in Ophthalmology of the University of California School of Medicine.

The polymyxin B sulfate used in the studies here reported was provided by Dr. D. S. Searle of the Burroughs Wellcome Co., Tuckahoe, N. Y.

*References 1, 4, 5, 7, 23, 24, 27, 33, 40, 44, 45.

The relative increase in the number of reported cases during this latter period may be due partly to improvement in the methods of bacteriologic examination and diagnosis coincident with the onset of the antibiotic era.

PATHOGENESIS

Although almost all infections of the eye due to Ps. aeruginosa are exogenous, Jacobi[19] cited a case reported by Pergens in which a metastatic orbital abscess was found to contain Ps. aeruginosa. This is the only recorded case of endogenous Ps. aeruginosa infection of the eye or its adnexa in a human being. Panas[32] demonstrated that Ps. aeruginosa may enter the eye of rabbits from the blood stream. He recovered Ps. aeruginosa from the aqueous humor of rabbits injected intravenously with cultures of this organism and believed that a predisposing factor for the immigration of the organism was irritation of the eye. However, Stock[42] produced nodular iritis and disseminated choroiditis in rabbits without irritation of the eye by injecting Ps. aeruginosa into a vein of the ear.

Most infections of the eye with Ps. aeruginosa follow mechanical, chemical or thermal injury to the eye. It is believed that Ps. aeruginosa is an "opportunist," having no invasive power of its own, being ordinarily controlled by the defenses of the body. Regarding infection elsewhere in the body, Jawetz[20] wrote: "Should these defenses not be developed as in infants, or break down, as in debilitated persons, or should the bacillus be introduced passively into areas devoid of adequate natural defense mechanisms, it can set up an infection." As such infection elsewhere in the body is characterized by chronicity and by the fact that it evokes little systemic response and rarely disseminates, it is curious that in the cornea it should attain extreme virulence once the "opportunity" to gain a foothold has occurred.

The opportunity for invasion is often presented to the organism by the physician himself. Introduction of Ps. aeruginosa into an abrasion of the cornea is a major source of infection. Allen mentioned four cases of keratitis due to Ps. aeruginosa which were thought to be caused by contaminated sulfonamide stock solution in an industrial plant dispensary.[48] Garretson and Cosgrove reported seven cases in another industrial plant following removal of foreign bodies from the cornea; they assumed that the most likely source of infection was the 4 per cent boric acid solution used in the first aid room. Lepard[24] reported two cases of ulcerative keratitis due to Ps. aeruginosa which were thought to be caused by contaminated fluorescein solution. Thygeson[44] reported an ulcer of the cornea attributed to the same origin, and three similar cases have recently occurred in an industrial plant in the San Francisco Bay Area.[40] McCulloch[26] listed 18 cases in which Ps. aeruginosa had been identified on culture of material from the conjunctiva, in five of which contaminated eyedrops had been used, contaminated physostigmine solution in four, and contaminated fluorescein solution in one. In these cases the organism appeared to have caused two cases of corneal ulcer, one of endophthalmitis following iridectomy, one of meibomitis, and one of infection after trephining. Bignell[41] reported ten cases of infection of the cornea, noting that four cases occurred in one medical center and four in another. He urged regular sterilization of penicillin drop dispensers.

Many cases of corneal infection with Ps. aeruginosa at the site of injury are not directly traceable to any one source, and it is of course impossible to institute prophylactic measures for these. However, the incidence of "office infections" can be decreased by assuring the sterility of medicine containers. Besides the solutions already mentioned, McCulloch[26] noted contamination with Ps. aeruginosa in solutions of Pontocaine,® pilocarpine, ethylmorphine, scopolamine and atropine. In addition, cortisone solution is known to have been contaminated by the organism.

There have been cases of ulcerative keratitis of the eye due to Ps. aeruginosa in which apparently no corneal injury had been sustained. In 1899 Bietti reported a case caused by a blow upon the eye with a fist in which no corneal lesion was visible. Axenfeld[2] in 1917 was impressed by the toxic action of the organism, and discussed a case in which he made no mention of corneal injury. Ohm[31] noted one case in which the precipitating factor was thought to be drying of the cornea. Guyton[16] and Giannini[15] each reported a case in which no history of corneal injury was obtained. Braley noted five cases of rather severe burns, in which infection of the skin with Ps. aeruginosa extended to the eye.

INVASIVENESS OF THE ORGANISM

A high degree of variation exists in the invasiveness found in the many strains of Ps. aeruginosa. Some strains have proven relatively innocuous, while others are so highly invasive that Herrenheiser[18] considered them the most dangerous of the pyogenic organisms of the eye. Despite the wide variety of methods utilized in combating the infection, Joy[22] said: "It is probable that the degree of virulence of the organism is more responsible for the outcome than is any particular form of therapy." This statement would appear to be borne out by the many failures in treatment. Indeed, similar infections of the urinary tract, the meninges, the middle ear, and those of surgical wounds have stubbornly resisted the barrage of therapeutic agents employed against

them. It is thought that the diversified nutritional ability of Ps. aeruginosa enables the organism to circumvent the action of most antibacterial agents.

These findings, combined with the fact that Ps. aeruginosa itself produces bactericidal substances, have stimulated a great deal of experimental and clinical research with this organism. In 1860 Fordos[12] isolated the blue pigment pyocyanine from cultures of Ps. aeruginosa. This has proven to have antibacterial properties. It has since been shown by Wrede and Strack[49] to be only one of the antibacterial agents produced by this organism. The others as listed by Florey et al.[11] include the "pyo" products, of which there are four, as well as pyolipic acid, and hemipyocyanin.

In 1893, Rumpf reported beneficial results after injections of solutions of killed Ps. aeruginosa into patients with typhoid fever, according to Florey the first example of the treatment of human disease by the injection of products from an organism other than that which caused the disease. Emmerich and Löw[9] were the first to report on the antibacterial effectiveness of a crude extract of old cultures of Ps. aeruginosa. They called this preparation pyocyanase. Escherich[10] reported successful use of pyocyanase in treating diphtheria, and Lowenstein[25] reported the successful treatment of various infections of the eye and conjunctiva.

In discussing contamination of medicines with Ps. aeruginosa, McCulloch[26] made the interesting observation that if a solution contained Ps. aeruginosa it nearly always yielded a pure culture of the bacillus. Thygeson[44] observed in a case of meibomitis that culture of the lid margin disclosed "no staphylococci at all, not even non-pathogenic strains."

REVIEW AND PRESENT STATUS OF THERAPY

Because of the persistence of Ps. aeruginosa and its ability to acquire resistance,[13] a wide variety of therapeutic agents have been employed against it with little success: hot compresses, bichloride of mercury, boric acid, pilocarpine, and Mercurochrome,® among others. Joy[22] was the first to introduce sulfa therapy into the ever-growing list of agents. He showed that large doses of sodium sulfapyridine fed prophylactically to rabbits was of definite value in retarding infection, although the response progressively decreased with an increase in the interval between the inoculation and the institution of therapy. Good results were obtained when the agent was given orally before inoculation or within six hours after, but if it was not given within 18 hours the results were not significant. The work of Robson and Scott[35] also emphasizes the necessity for promptness in instituting therapy: Using instillations of 30 per cent solution of sodium sulfacetamide four or five times daily for experimentally induced lesions of the cornea, they found that if the instillations were begun within five hours after inoculation, favorable results could be attained; but if not until twelve hours had elapsed, the results were minimal.

Seeking a therapeutic procedure that would act rapidly and adequately against organisms that have penetrated into the stroma of the cornea, Von Sallmann[47] attempted a combination of oral sulfa therapy with local sulfa drugs introduced by iontophoresis. He used sulfapyridine, sulfadiazine and sulfacetamide on experimentally induced lesions in rabbits, and found that sulfadiazine entered the eye in greater amounts than the other drugs. The most favorable results were obtained by using a combination of sodium sulfadiazine introduced iontophoretically and sulfadiazine powder given locally and orally 24 to 30 hours after inoculation.

Reports conflict as to the efficacy of penicillin therapy. Juler and Young[23] treated a case with locally applied penicillin drops without beneficial effect. Sorsby[39] likewise reported no response to penicillin administered subconjunctivally (one million units at intervals of 24 to 48 hours). Alpert,[1] however, succeeded in curing ring abscess of the cornea caused by Ps. aeruginosa with injections of 75 units of penicillin into the anterior chamber of the affected eye combined with oral doses of sulfadiazine. Pendexter[33] treated a case with penicillin drops and intramuscular injection of penicillin; the ulcer healed and the vision was recorded as 20/200 three months after onset. Despite the use of streptomycin, penicillin, and Saemish section, however, Maschler[27] was unable to restore vision in an ulcerated eye, although removal of the eye was not necessary.

In a recent report Bignell[4] stressed the importance of clinical recognition of infection and institution of early and continued treatment. He obtained good results by subconjunctival administration of streptomycin plus streptomycin drops. He continued this therapy until "no dead white infiltration" remained.

Despite these successful results with sulfonamid, penicillin and streptomycin, most strains of Ps. aeruginosa have recently been shown to be resistant to these drugs in vitro.[13] It has also been shown that the most effective antimicrobial agent now available for the suppression of this organism is polymyxin.[21, 34] Wiggins[48] found polymyxin to be more effective than either aureomycin or streptomycin against 85 strains of Ps. aeruginosa in vitro. He also obtained beneficial effects upon severe experimental Ps. aeruginosa infection of the cornea in rabbits when polymyxin was started as late as 24 hours after inoculation. Ross,[36] in a similar trial, was unable to con-

clude that polymyxin was of practical value, but Braley pointed out that in Ross's experiment the infection was much more severe and therefore results would not be expected to be as good as those obtained by Wiggins.

Miller and Long[29] treated a case of Ps. aeruginosa infection of the eye with polymyxin given intramuscularly and in an eye bath in addition to streptokinase and streptodornase, the latter being used because of a thick mucopurulent exudate. Some vision was retained in the affected eye and they expressed the opinion that if therapy had been instituted earlier, a better result could have been obtained.

Jawetz[20] stated: "Polymyxin B does not permit readily the development of resistance in populations of microorganisms exposed to its action." He showed that in only one of a series of 35 cases of Ps. aeruginosa infection of various portions of the body did the bacteria reappear during a short course of treatment with polymyxin.

It would seem, therefore, that some form of treatment with polymyxin might be effective against Ps. aeruginosa in ulceration of the cornea. With this in mind, the effect of polymyxin was tested in vitro and on experimental Ps. aeruginosa infections of the cornea in rabbits.

EXPERIMENTAL STUDIES

A. Sensitivity Tests in Vitro

1. Disc sensitivity tests:

Nine strains of Ps. aeruginosa isolated from patients at the University of California Hospital were used. The 24-hour growth of the organism on proteose No. 3 slants was suspended in 0.9 per cent saline solution. A 10^{-4} dilution of this suspension was evenly spread over proteose No. 3 agar plates and discs of filter paper containing 5 mcg., 10 mcg., and 30 mcg. respectively of polymyxin were placed upon each plate. The plates were incubated at 37 degrees C. for 18 hours. The presence of a zone of inhibition surrounding the discs was taken as qualitative evidence of the sensitivity of the strain of Ps. aeruginosa to polymyxin.

With all nine strains zones of inhibition surrounded the three discs on each plate. The largest zone of inhibition was noted about the 30 mcg. disc.

2. Tube dilution sensitivity tests:

Nine strains of the organism were tested against serial twofold dilutions of polymyxin, 0.2 ml. of the 10^{-4} dilution of each strain being placed in ten tubes containing 2 ml. of sterile proteose No. 3 broth and the serial dilutions of polymyxin. Turbidity indicated resistance of the strain to polymyxin as diluted. The results of this test are given in Table 1.

TABLE 1.—*Tube tests of sensitivity of nine strains of Ps. aeruginosa to serial dilutions of polymyxin B sulfate*

Tube	Units of Polymyxin in 2 Ml. of Broth	Survival of Strains
1	500 (0.5 ml.)	None
2	250 (Dilution of 1)	1 and 9
3	125 (Dilution of 2)	1 and 9
4	63 (Dilution of 3)	All
5	31 (Dilution of 4)	All
6	16 (Dilution of 5)	All
7	8 (Dilution of 6)	All
8	4 (Dilution of 7)	All
9	2 (Dilution of 8)	All
10	1 (Dilution of 9)	All

Two loopsful from the tubes showing no turbidity were subcultured in sterile broth containing no antibiotic. None of the subcultured tubes showed turbidity after 72 hours of incubation at 37 degrees C. This indicated that the polymyxin had a bactericidal, rather than a bacteriostatic effect upon all the strains of Ps. aeruginosa tested.

B. Virulence Tests in Vivo

1. Plate counts:

In order to determine the approximate number of organisms to be inoculated into the corneas of test rabbits, plate counts were made of three dilutions of each of the nine strains of the organism. One ml. of a 10^{-4} dilution of each was placed in nine separate petri dishes and mixed with melted agar (45 degrees C.). After cooling, the plates were incubated at 37 degrees C. for 24 hours and the colonies counted through a 3-power magnifying lens. Similar counts were made upon the 10^{-5} and the 10^{-6} dilutions.

Plates having between 30 and 300 colonies each were used in determining the number of organisms per milliliter of inoculum.

It is estimated that on the average 0.02 ml. of the 10^{-4} dilution of each of the nine strains contained approximately 200 organisms.

2. Inoculation of rabbit corneas:

Intracorneal inoculations containing 0.02 ml. of the 10^{-4} dilution of each of the nine strains of Ps. aeruginosa were made. Within 24 hours a very definite corneal ulcer was visible in all eyes. The infections were observed for four days and were seen to progress rapidly to involve the entire cornea in all cases.

C. Local Treatment of Experimentally Produced Ps. Aeruginosa Infections of Rabbit Corneas

1. Methods:

One virulent strain of Ps. aeruginosa was selected from the nine strains previously tested. Intracorneal inoculations of both eyes of 18 rabbits were made, each inoculation containing 0.02 ml. of a 10^{-5} dilu-

tion, in 0.9 per cent saline solution, of a 24-hour culture of the strain (approximately 50 organisms in each cornea).

Six rabbits received treatment immediately after inoculation with the organisms. Six were not treated until 24 hours after inoculation, and the remaining six received no treatment for 48 hours. Treatments in all cases were continued for six days.

Half the rabbits in each group received subconjunctival injections containing 200,000 units (20 mg.) of polymyxin, in 0.5 ml. of 0.9 per cent saline solution. To retard dispersion of the drug by the circulation, 0.1 ml. of a 1:1000 solution of epinephrine was added as a vasoconstrictor. Only the left eyes were treated, the right eyes serving as controls. The injections were repeated at 48-hour intervals.

The other rabbits in each group received subconjunctival injections containing exactly the same combination of polymyxin and epinephrine. To promote more rapid infiltration of the antibiotic to the deeper levels of infection, 0.05 ml. of hyaluronidase (containing 10 turbidity-reducing units) was added to the preparation. In these rabbits also, only the left eyes were treated, and the injections were repeated at 48-hour intervals.

2. Results:

In the rabbits treated immediately after inoculation all six control eyes became infected and corneal ulcers developed. These ulcers were easily visible within 24 hours and by 48 hours had extended over the entire cornea. The three eyes treated only with polymyxin plus epinephrine remained clear and showed no evidence of infection of the cornea. Two of the three eyes treated with polymyxin, epinephrine, and hyaluronidase remained clear. In the third eye a moderate infiltration developed in the cornea, which became hazy, although no discharge was noted; this effect subsided somewhat after the third injection.

In the rabbits treated from 24 hours after inoculation, all six control eyes became infected and rapidly progressive corneal ulcers developed. In the other six eyes circumscribed ulcers of the cornea 3 to 5 mm. in diameter developed but remained localized throughout the six-day course of therapy with minimal discharge. No significant difference was noted between the three eyes which had been treated with hyaluronidase and the three which had not.

In the rabbits which received no treatment for 48 hours after inoculation, four of the six control eyes became infected and rapidly progressive corneal ulcers developed, while the other two eyes remained clear. In all six treated eyes rather large corneal ulcers developed before treatment was begun, but by comparison with the controls it was concluded that the treatment checked the further spread of the infection. No significant difference was noted in the eyes treated with hyaluronidase.

It is possible that the action of hyaluronidase contributed to the further spread of the infecting organisms as well as the polymyxin. It is believed that a significant change in the results might be attained by larger doses.

The high concentration of polymyxin in the injections caused a chemical irritation of the conjunctiva, but this subsided in the 48-hour periods between injections.

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Mandibular Herpes Zoster

With Report on the Use of Cortisone in a Case with Geniculate Ganglion Symptoms

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• *Herpes zoster, an acute specific viral infection, occurs more commonly than is generally supposed. It should be differentiated from other diseases involving the ear and skin; it must be considered as a possible etiologic agent in some palsies of the facial, glossopharyngeal or vagal nerves.*

The type of cephalic herpes zoster should be carefully differentiated; cases involving the "geniculate zone" may be other than "Ramsay Hunt's syndrome." This syndrome is now defined as a herpes zoster eruption of the external ear at the "geniculate zone" with involvement of the seventh or seventh and eighth nerves.

The "topognostic" method is the best for determining the level at which the facial nerve has been affected.

It is questioned whether there is a single outstanding therapeutic agent for this disease. Cortisone had no apparent therapeutic effect in a case reported herein.

SINCE CEPHALIC HERPES, including Ramsay Hunt's syndrome, is a manifestation of herpes zoster still not completely understood, the present communication deals with the present concept of Hunt's syndrome and some of the overlapping features of this disease and other kinds of cephalic herpes. In a case herein reported upon, cortisone was administered to determine its efficacy.

Herpes zoster is an acute specific virogenic infection usually occurring sporadically, although sometimes in small epidemics. The acute phase lasts a few days to several weeks. The virus is closely related to that of varicella and may be identical. Various factors seem to predispose to this disease such as exposure, fatigue, trauma, debilitation, septic states and (formerly) treatment with heavy metals. One attack confers definite and lasting immunity. Rabbiner[25] stated that it is a comparatively uncommon disease and that a case he reported upon was the first in 43,521 cases of disease of the ear observed on the otolaryngological service of the New York Post-Graduate Hospital. However, it would appear to be more common than stated inasmuch as in many cases the symptoms may not be full-blown and misdiagnosis is a possibility.

The disease is characterized by early symptoms such as fever, malaise and various paresthesias which may include very severe pain in the involved segmental epidermal or mucosal areas. Although it most often affects sensory ganglia and nerves, there may be involvement of motor nerves. If the facial nerve is involved, paralysis may precede or follow the eruption. Within a few days the characteristic lesions, indistinguishable from those of varicella, appear. The spinal fluid contains an increased number of lymphocytes. The course is usually rapid, diminution of the pain and resolution of the epidermal and mucosal lesions occurring within a few days of onset.

Sequelae, although they are rare, may include prolonged neuralgia, noted particularly in aged and debilitated persons, and motor palsy. If the ophthalmic division of the trigeminal nerve is involved, serious damage to the eye may result.

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Herpes zoster should be differentiated from external otitis, mastoiditis, labyrinthitis, erysipelas and diseases which are characterized by vesiculation. It is believed that some cases of idiopathic facial palsy and palsies of the glossopharyngeal and vagal nerves may be aberrant cases of herpes zoster. Certainly before the characteristic lesions occur the diagnosis may not be very apparent.

The present concept of Ramsay Hunt's syndrome includes a zoster eruption of the external ear at the "geniculate zone" associated with involvement of the seventh or seventh and eighth nerves.

Although the disease has been known since early times, Von Baerensprung in 1861 was the first to demonstrate the lesion in the spinal ganglia. Head and Campbell[15] in 1900, in a large series of cases studied at autopsy, noted involvement not only of the posterior root ganglia but also of the posterior nerve roots, the corresponding peripheral nerves and the ascending fibers in the posterior columns of the spinal cord. The chief pathological features were pronounced inflammatory and hemorrhagic

reaction followed by destruction of the neural tissue, resolution and development of fibrous tissue at the site of destruction. Definite affinity for sensory cranial or spinal ganglia and the corresponding neural distribution was noted. Lever[22] stated that the dermal lesions of varicella and herpes zoster, microscopically observed, are very similar. In both there is pronounced degeneration of the epidermal cells producing a "ballooning degeneration" and a unilocular vesicle. He expressed belief that the causative viruses are identical.

Denny-Brown and co-workers,[7] in reporting upon autopsy in a case of occipitocollar and auricular herpes with seventh nerve palsy, noted that the geniculate ganglion was normal and that there was patchy lymphocytic infiltration in the facial nerve. Thus they established that the geniculate ganglion is not the site of the lesion in certain cases of Ramsay Hunt's syndrome.

Hunt[16] in the early part of this century directed much attention to herpes zoster involving the head and neck. He elaborated on the herpetic inflammation of the geniculate ganglion and classified the involvement of this ganglion into four types of increasing severity: (a) herpes oticus, (b) herpes oticus with facial palsy, (c) herpes oticus with facial palsy and hypoacusis, (d) herpes oticus with facial palsy and Meniere's complex.

The distribution of the herpetic eruption involved one or more of the following areas: the facial, auricular or occipitocollar.[17] Hunt believed that the inflammation involved one or more of several ganglia including the gasserian, geniculate, cervical, acoustic, glossopharyngeal and vagal ganglia.[16]

The zoster area for the geniculate ganglion was thought to include the following: "the tympanic membrane, the external auditory canal and meatus, the concha, tragus, anti-tragus, lobe of the ear (external surface), anthelix, and the fossa of the anthelix."[16]

Hunt[18] believed that in cases in which seventh nerve palsy was present with facial or occipitocollar herpes, the geniculate ganglion was involved in the process. Although most of Hunt's conclusions have been accepted, his belief that the geniculate ganglion is involved concomitantly when facial paralysis is associated with a trigeminal or cervical herpes zoster has been invalidated by the evidence obtained at autopsy and subsequent clinical interpretation.

Engstrom and Wohlfart[8] reported four cases of herpes zoster, in two of which there were herpetic lesions and palsy in the distribution of the ninth and tenth nerves, vesicles in the geniculate zone and eighth nerve involvement. The authors believed that the sites of the lesions were limited to the glossopharyngeal and vagal ganglia, although lesions occurred in the geniculate zone and the eighth nerve was involved. They indicated that certain cases of herpes zoster oticus may be of vagoglossopharyngeal origin and questioned whether herpes zoster oticus in the "Hunt's syndrome" is caused by changes in the geniculate ganglion. It was their opinion that Ramsay Hunt's syndrome should include only those cases of herpes oticus with facial palsy and/or lesions of the eighth nerve.

Kidd[20] and other investigators have questioned the existence of a sensory cutaneous function of the seventh nerve. Furlow[12] reported on a case in which the patient had deep pain in the ear initiated by the stimulation of a small area of the external auditory canal. In this patient all conservative measures failed. At operation when the nervus intermedius was touched the pain was duplicated. The nerve was sectioned and there was no further occurrence of the pain. The sensory function of the seventh nerve has been accepted although there is considerable overlapping with the auriculotemporal nerve anteriorly, the second and third cervical nerves posteriorly and the glossopharyngeal and vagal nerves.

Much credit is due Tschiassny for his furtherance of Erb's work in localizing the site of lesions of the facial nerve. Erb[9] divided peripheral palsy into several divisions, the exact site depending on the one or more branches of the nerve involved. He included the following factors: taste, hyperacusis, presence or absence of palsy of the soft palate due to the action of the levator palati, paralysis of the auricular muscles and dryness of the mouth. According to Tschiassny[29, 30] the seventh nerve consists of four portions, two being efferent, namely the motor and secretory portions. The remaining two, sensory and gustatory, are afferent. He expressed belief that the greater superficial pretrosal nerve transmits secretory fibers for the lacrimal gland. Also it was his belief that the fibers transmitting the sensation of taste from the anterior two-thirds of the tongue do not pass via the seventh nerve central to the geniculate ganglion. Thus a lesion of the seventh nerve could be localized to a particular level. Furthermore, he expressed opinion that there are two communications between the seventh and eighth nerves in the internal auditory canal, one communication (termed "suprageniculate") going between the eighth and seventh nerves central to the geniculate ganglion; the other ("transgeniculate") between the eighth nerve and the geniculate ganglion. Thus a suprageniculate lesion would not involve the function of taste inasmuch as there are no taste fibers present at this level. A transgeniculate lesion would involve all the functions of the seventh nerve including taste and lacrimation.

According to Tschiassny,[31] testing of the lacrimal function by mechanical or chemical irritation of the

nasal mucosa is not a reliable method. However, unilateral absence of lacrimation upon stimulus of an emotional character is much more indicative of unilateral dysfunction.

In mandibular herpes the loss of taste in the homolateral portion of the tongue could be attributed to one or both of the following factors: (1) Severe herpetic glossitis in the distribution of the lingual nerve causing damage to the taste buds in the homolateral portion of the tongue. (2) Herpetic neuritis of the lingual nerve affecting the lingual mucosa and the terminal filaments of the chorda tympani taste fibers, thus involving the chorda tympani nerve indirectly.

There is no unanimity of opinion regarding the central pathways of taste. Ranson,[26] Krieg[21] and Schwartz and Weddell[27] expressed belief that the nervus intermedius transmits the sensation of taste central to the geniculate ganglion from the anterior two-thirds of the tongue. Grinker and Bucy[14] observed that taste fibers within the seventh nerve may possibly enter the petrosal or sphenopalatine ganglion rather than pass through the seventh nerve. Ballenger[2] expressed opinion that lesions central to the geniculate ganglion do not affect the sense of taste. Thus, attempts to place the level of a seventh nerve lesion based on the presence or absence of taste may be on dubious grounds.

Furthermore it is questioned whether the communications between the seventh and eighth nerves in the internal auditory meatus are a definite and constant anatomic fact, considering their filamentous nature. Piersol[24] stated that "these apparent communications between the seventh and eighth nerves are, in fact, only aberrant strands of facial fibers that return to the seventh after temporary association with the acoustic."

At present the best means of localizing the site of a lesion involving the facial nerve is based on the topognostic method elaborated by Tschiassny[29, 30] in which the presence or absence of the functions of the facial nerve are evaluated; however, these may be absent, altered or transient.

THERAPY

Numerous remedies have been used in the treatment of this disease. Foerster[11] employed roentgenotherapy of the spinal region. He reported that the duration of the zoster eruption was probably shortened and that the pain definitely diminished. Becker[3] believed that good results followed the use of transfusions of blood from convalescent subjects. Dennie, Morgan and Coombs[6] used multiple injections of moccasin venom. In 18 of 20 cases improvement occurred and they believed that this method gave the best results of any single drug that had been used. Marsh[23] considered protamide superior to pituitrin, thiamine chloride, autohemotherapy, sodium iodide or high voltage roentgen therapy. Banthine® appeared to shorten the course of the disease according to Brown, Reekie and Sinclair.[4] Gans[3] employed aureomycin in six cases of herpes zoster and rapid resolution of the disease followed. Shier and Provisor[28] used aureomycin and were impressed by favorable results. Babbage[1] stated that chloramphenicol aided the resolution of the disease. Carter[5] divided a group of 44 consecutive patients with herpes zoster into four groups. The patients in one group were not treated and those in the other three were treated with chloramphenicol and different doses of aureomycin, respectively. Except for the control of secondary infection, the results were essentially the same in all groups. Kass, Aycock and Finland[19] in using aureomycin and chloramphenicol in a series of 72 patients with herpes zoster corroborated Carter's results and concluded that these two agents were not particularly efficacious. Fishman,[10] reporting on the use of a daily maintenance dose of 65 mg. of cortisone for a patient with rheumatoid arthritis, in whom herpetic lesions appeared on the right shoulder during the eighth month of therapy, concluded that cortisone neither affected the course of herpes zoster nor alleviated the pain associated with it. There are few reports in the literature regarding the use of cortisone. Additional remedies proposed for zoster are very numerous and include pitressin, thiamine, diphtheria antitoxin, liver extract, Etamon,® ergot preparations, dihydroergotamine-45, autohemotherapy and procaine injections into the intervertebral and prevertebral ganglia.

Although herpes zoster is not a fatal disease and sequelae are rare, sometimes the epidermal and mucosal lesions are pronounced and the pain may be very severe. Also, in the case of ophthalmic herpes, the consequences may be serious. Hence it is still necessary to find an effective means of treatment. In the following case cortisone therapy was given.

REPORT OF A CASE

A male patient 38 years of age when first observed had a history of infection involving the right ear beginning approximately three days previously and characterized by pain but no discharge or impairment of hearing. At the onset of the illness he noticed, when combing his hair, sensitivity of the scalp on the right side, and while shaving he noted another sensitive area on the chin. Later there was a more definite stabbing pain deep within the ear. Blisters began to form on the lower lip and chin and there was discomfort about the right eye. Later there was a sensation of tingling and prickling of the entire right side of the face.

When first observed, the patient had small ulcers scattered over the buccal mucosa. There were some vesicles on the lower lip and chin and several just anterior to the root of the helix. The auditory canal appeared approximately normal although the membrana tympani had a bluish tinge.



Involvement of sensory branches of the mandibular nerve.

An audiogram revealed normal hearing. On July 10 there was hypogeusia to sugar, salt, vinegar and quinine and diminished lacrimation as tested by nasal inhalation of onion and formalin. Hyperacusis was absent. Meanwhile the pain had become worse and there were more lesions on the skin and on the buccal mucosa. The vessels of the external auditory canal were engorged and vesiculation was beginning. Parenteral administration of 200 mg. of cortisone daily, given in two equal doses with an eight-hour interval, was begun on July 10 and continued for the next six days. On July 11 the pain was almost unbearable, recurred at short intervals, and did not respond to sedatives and analgesics. The right canal showed considerable ulceration and edema in the "geniculate zone" although the membrana tympani appeared normal. By this time the herpetic lesions were noted to have delineated the entire sensory distribution of the mandibular nerve including the temporal, mandibular, buccal, gingival and lingual areas and the anterior pillar. On July 12 the pain had diminished considerably although no change was noted in the lesions. Within the next several days, however, they began to heal. By July 30 the skin was almost normal although there remained areas of paresthesia in the scalp and about the ear.

COMMENT

In the current concept, Ramsay Hunt's syndrome is limited to a herpetic eruption in the "geniculate zone" with involvement of the seventh or seventh and eighth nerves.

In the case here reported, all functions of the facial nerve except motor function were apparently affected. The "geniculate zone" was included in the site of the eruption. This was not a true "geniculate" eruption and could be attributed to the contiguity of the nerve supply to this area inasmuch as the posterior wall of the external auditory canal is not considered to be supplied by the auriculotemporal nerve.

The loss of the sense of taste would be presumed to be owing to chorda tympani involvement. However, the chorda tympani *per se* was not involved in the herpetic process and the loss of taste was owing to glossitis in the area supplied by the lingual nerve or neuritis of the lingual nerve involving the lingual mucosa and the chorda tympani nerve indirectly.

There is no physiologic explanation for diminished lacrimation in the absence of involvement of the seventh nerve; a temporary reduction is a transient relative finding and is noted by comparison with the normal eye. The discomfort and general status of the patient undoubtedly entered as factors. Furthermore, it is obvious that mandibular herpes would create more symptoms manifesting seventh nerve involvement than would involvement of either of the other two divisions of the trigeminal nerve.

Since the vagus and glossopharyngeal contribute to the nerve supply of the ear, aural symptoms and lesions may be anticipated when either or both of these nerves are involved in herpes zoster.

The best means of determining the site of the lesions is the "topognostic" method based on the level at which the involved branches leave the facial

nerve. The opportunities for postmortem examination to determine the site are few, for herpes zoster is not of itself a fatal disease.

In the case here reported, the pain increased and the epidermal lesions extended for two days following the beginning of cortisone therapy, although it must be noted that the hormone was not given in maximal dosage. Since the duration of herpes zoster is variable, no positive conclusions can be drawn as to the efficacy of cortisone therapy.

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CASE REPORTS

- **Unusual Scrotal Lipoma Associated with Sigmoid Diverticulum**
- **"Polyp" of the Prostate Protruding into the Rectum**
- **Resection of Recurrent Carcinoma of the Esophagus**
- **Diagnosis of Subdiaphragmatic Abscess by Needle Biopsy of the Liver**
- **Pulmonary Paraffinoma Verified at Thoracotomy**

Unusual Scrotal Lipoma Associated with Sigmoid Diverticulum

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LIPOMAS ARE VERY COMMON TUMORS and may occur in any part of the body but are seldom found in the inguinal area and even more rarely in the scrotum.

Most scrotal lipomas are attached to the spermatic cord. The site of origin often is not determined. They are usually benign but may become malignant. Symptoms are caused generally by the size, weight and pressure of the growth. There is wide variance in the weight reported for lipomas of the scrotum: Livermore,[4] in a compilation of reports by a number of observers[2, 3, 7, 8, 9, 10] quoted weights from 225 gm. to over 9 kg.

Lipoma of the inguinal canal usually simulates inguinal hernia, with which it may be associated. Watson[11] noted that most such tumors are attached to the spermatic cord or sac near the internal ring. Diagnosis in most cases is very difficult, especially if the tumor is noted suddenly after a strain and is associated with nausea and vomiting. A number of cases have been reported[1, 5, 6] in which a diagnosis of hernia was erroneously made and hernia belts or trusses were worn until the tumor was observed at operation. It has been postulated that small fatty particles about the spermatic cord break through the tunica and coalesce with preperitoneal fat, intra-abdominal pressure then thinning the fascia and forcing the lipoma as a wedge through the fascial planes or the inguinal canals.

REPORT OF A CASE

A 49-year-old man had undergone operation seven years before for repair of a right indirect inguinal hernia, which recurred five years later. Meanwhile a mass in the left groin had developed two years after the operation and had increased in size until it caused some distress on straining at bowel movement and at work. The only other symptoms reported were an occasional feeling of gas pressure in the lower left quadrant of the abdomen and an uncomfortable but not painful sensation of pressure in the left side of the scrotum. The patient had worn a double truss for five years.

On physical examination a large, soft mass was noted in the right inguinal canal; the external ring was small and there was no propulsion through the ring on straining. The left external ring was large enough to admit two fingers, and a mass was palpated in the canal which came down to but not through the ring on straining. The vas deferens, testicle and epididymis on the right were normal; the left testicle and epididymis were of normal size and consistency, but in the upper portion of the scrotum there was a firm, nodular mass which appeared to be inseparably attached to the spermatic cord and was tender to palpation. It was not translucent. A urologist who was consulted believed that the mass probably was a fibroma of the cord but might be a malignant tumor.

In April 1952 the patient was admitted to hospital for elective operation for repair of bilateral hernia.

At operation the right direct inguinal hernia was repaired by the McVey technique. The left inguinal canal was opened in the usual manner and the inguinal sac was freed from the vas deferens and other vessels by combined sharp and blunt dissection. The sac was attached to the spermatic cord by thin connective tissue. It was 11 cm. long and 2 mm. thick. The neck of the sac was 3.5 cm. wide. Bulging through the neck of the sac was a diverticulum of the sigmoid colon approximately 5 cm. long, 2.5 cm. in width and 3.0 cm. in depth. Extending from the base of the diverticulum and attached to the posterior surface of the sac was a hard fibrous cord about 3.0 mm. in diameter extending the entire length of the sac and terminating in two adjoining papillary masses, each approximately 2.0 by 1.5 by 1.5 cm. in size, which were tightly attached to the inner surface of the sac at the most distal point.

The inguinal sac with the attached cord and tumors was excised at the neck; the diverticulum was excised and the opening into the sigmoid closed. The neck of the sac was sutured and fastened beneath the internal oblique muscle, and the hernia was repaired by the McVey technique.

Pathologist's report: The masses, polypoid in appearance, were composed of yellowish-gray tissue which on microscopic section was seen to be mature fat cells, some proliferative especially at the margins of the masses. In some spots the fat was necrotic. The lipoma had a distinct fibrous capsule and a few fibrous septa. Pronounced proliferation of fibrous tissue was noted in some areas of the wall of the sac, with numerous fibroblasts. No evidence of malignant change was observed.

COMMENT

Because of the peculiar attachment of the lipoma to the side and the distal end of the inguinal sac and to the diverticulum, it is believed that the hernia was of pulsion type and was caused by weight of the lipoma pulling the diverticulum into the inguinal canal. The author has noted no other published report of a lipoma originating from a diverticulum.

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"Polyp" of the Prostate Protruding Into the Rectum

Thirty-Eighth Reported Case of Leiomyoma of the Prostate

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BENIGN PROSTATIC ENLARGEMENT or a prostatic neoplasm frequently is diagnosed by rectal examination. Rarely observed, however, is the phenomenon in the present case: A lesion that seemed, on palpation, to be a discrete rectal polyp was found to originate in the prostate.

REPORT OF A CASE

A 48-year-old white man admitted to hospital for the operative repair of a left inguinal hernia, had no complaints referable to the urinary tract or the bowel. On rectal examination a hard, smooth-surfaced pedunculated non-tender mass about 2 cm. in diameter was palpated. It seemed to be attached to and to arise from the anterior rectal wall. Upon proctoscopic examination it was observed that the "polyp" apparently arose from extrinsic structures and was pushing into the rectum. No evidence of disease was seen in an excretory urogram or in a cysto-urethrogram.

The prostate was exposed through a perineal incision and it was seen that the lesion that had been palpated rectally was a pedunculated tumor arising from the prostate and pushing into the rectum (see Figure 1). It was easily excised from the prostate, which looked and felt normal.

Pathologist's report: The specimen, a hard encapsulated tumor, was 3 cm. in diameter. The surface of the cut section was a pale grayish white.

Upon microscopic examination of sections (see Figure 2) the tumor was observed to be composed of solid interlacing bundles of smooth muscle fibers, the stroma being composed of strands of connective tissue. The pathological diagnosis was leiomyoma of the prostate.

From the Urology Section of the Surgical Services, Veterans Administration Hospital, San Francisco 21, California.

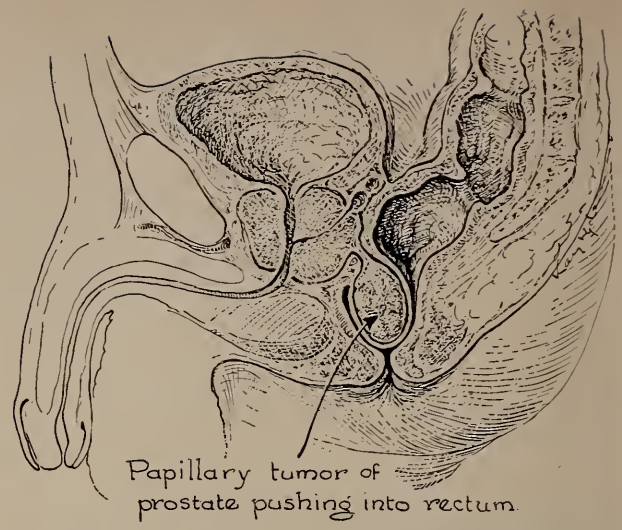


Figure 1.—Diagram showing the pedunculated prostatic tumor protruding into the rectum.

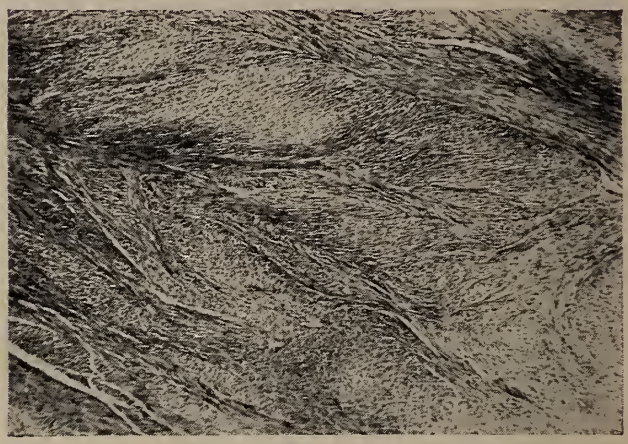


Figure 2.—Low power photomicrograph of the leiomyoma.

DISCUSSION

This case of leiomyoma of the prostate is the thirty-eighth such case of record.[1] McIntyre,[4] in a review of the previously reported cases, noted that in most instances the primary symptoms were referable to the urinary tract. However, in 11 cases, as in the case reported here, the tumor protruded into the rectum[3] or perineum.

There has been no report of recurrence after adequate surgical removal.[2]

SUMMARY

A case of a pedunculated prostatic tumor protruding into the rectum is presented. The tumor was a leiomyoma, and the case is the thirty-eighth reported case of leiomyoma of the prostate.

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Resection of Recurrent Carcinoma of The Esophagus

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THERE HAS BEEN A GROWING FEELING recently among surgeons that carcinoma of the esophagus is an incurable lesion and that only palliative operation is indicated, if any. It is true that surgical cure is relatively rare, but palliation by resection is common. Following is a report of a case in which, following resection known to be inadequate, reoperation could not be done immediately because of the condition of the patient. Resection was carried out again 15 months later when symptoms of recurrence developed, and thereafter the patient was asymptomatic.

REPORT OF A CASE

The patient, a man 59 years of age, was admitted to hospital Nov. 30, 1949, with a history of difficulty in swallowing which had begun suddenly after a scare, four and one-half months previously. Since then the patient had ingested only liquids and the body weight had decreased ten pounds.

Upon x-ray examination with barium swallow, a constricting lesion of the mid-esophagus was noted. Esophagoscopic examination was carried out and a stenotic lesion was observed 39 cm. from the incisors. Squamous cell carcinoma of the esophagus was diagnosed by biopsy.

At operation a 3x4 cm. tumor of the esophagus was observed below the aortic arch without evidence of regional extension. The esophagus was resected from 5 or 6 cm. above the lesion to the stomach. The stomach was mobilized and anastomosed to the esophagus below the aortic arch. In pathological examination of frozen sections of the removed specimen no evidence of tumor was noted at the margins. The postoperative course was very stormy, owing to pneumonia and particularly to auricular fibrillation and flutter. The patient was treated with digitalis and quinidine. He remained critically ill for about one month. The cardiac irregularity was controlled but the patient continued unable to eat and his condition continued to deteriorate until quinidine was discontinued. He then began to recover and soon was eating and feeling well.

When examination of permanent pathological sections was carried out, residual tumor extending to the margin of the resected specimen was noted in one small subepithelial focus, but it was felt that further operation was not indicated at that time because of the greatly increased operative risk and the lack of definite proof of residual tumor. The patient ate well and remained asymptomatic until January, 1951, when frequent regurgitation occurred and the body weight decreased eight pounds. Upon x-ray examination a 2.5 cm. well-defined napkin-ring defect was observed at the lower end of the esophagus at the esophagogastric anastomosis. A biopsy specimen was taken from a tumor observed by esophagoscope 26 cm. from the incisors, and it was reported as squamous cell carcinoma.

Thoracotomy was done March 7, 1951, and a recurrent tumor 3 to 4 cm. in diameter was observed at the site of anastomosis. It was adherent to the aortic arch and hilum of the lung. The tumor was resected and anastomosis was carried out anterior to the aortic arch after frozen sections revealed adequate margins on both ends of the specimen.

The patient did well until the sixth postoperative day. Then tension pneumothorax on the left side developed, apparently owing to leakage at the site of anastomosis. Insertion of a tube intercostally relieved the condition, but on the following day bronchoscopy was necessary for relief of atelectasis of the right lower lobe. Purulent fluid drained from the intercostal tube. On March 17, jejunostomy was done and a tube was inserted for feeding. Homogenized milk only was infused. Nothing was given by mouth. On March 27 auricular flutter developed. It was eventually controlled by administration of digitalis and quinidine. On March 28, rib resection was carried out to drain the area of empyema and the intercostal tube was removed.

The anastomotic fistula healed gradually. Oral feeding was begun again and the patient was eating a soft diet by April 14, 1951. The tube to the jejunum was subsequently removed, and the patient was discharged from the hospital on June 1, 1951. At that time, the lung was expanding to obliterate the space at the site of empyema and the patient was eating well and gaining weight. He was examined at frequent intervals thereafter. He returned to work as a plumber in March, 1952. Gastrointestinal x-ray studies in July, 1952, showed only some scarring at the anastomosis, and there was no change from the preceding gastrointestinal series. The patient said he felt well and ate well. At last report, September 24, 1953, the patient was asymptomatic and was working full time.

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Diagnosis of Subdiaphragmatic Abscess By Needle Biopsy of the Liver

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IN A CASE in which neither clinical observation nor laboratory studies had given any indication of the presence of the lesion, subdiaphragmatic abscess was diagnosed after examination of a biopsy specimen taken by needle from the liver. The procedure caused no untoward complication.

CASE REPORT

A 55-year-old man was admitted to hospital with complaint of epigastric burning sensation after meals for two years, a loss of 20 pounds in weight in six months, and melena and weakness of two weeks' duration. He was obese, pale and apparently acutely ill. The blood pressure was 120 mm. of mercury systolic and 70 mm. diastolic, the pulse rate 100 per minute, and the temperature 99 degrees F. The abdomen was distended and a mass was felt in the epigastric area. The liver was palpable three fingerbreadths and the spleen one fingerbreadth below the respective costal margins.

Erythrocytes numbered 2,280,000 per cu. mm. and the hemoglobin value was 52 per cent. Leukocytes numbered 9,600 per cu. mm. and the cell differential was within normal range. No abnormality was noted in urinalysis. The result of a serologic test for syphilis was negative. An obstructive pyloric lesion with 80 per cent retention of barium was observed roentgenographically.

At operation a large annular metastatic antral adenocarcinoma arising from the head of the pancreas was observed and total gastrectomy, splenectomy, esophagojejunostomy, and entero-enterostomy were carried out.

In the postoperative period the patient had low-grade jaundice and pleural effusion on the left side. He was dis-

From the Medical and Laboratory Services, General Medical and Surgical Hospital, Veterans Administration Center, Los Angeles (Molle, Kaplan), and the Pathology Department of the University of California at Los Angeles School of Medicine (Kaplan).

charged a month after the operation. Six months later, not having felt fully well meanwhile, the patient was readmitted because of increasing anorexia and epigastric pain and jaundice of two weeks' duration. Erythrocytes numbered 3,200,000 per cu. mm. and the hemoglobin value was 63 per cent. Leukocytes numbered 10,550 per cu. mm. and the cell differential was within normal limits. The icteric index was 24 units. The alkaline phosphatase content of the blood was 10.3 units (Bodansky) and the total cholesterol content 258 mg. (43 per cent esters) per 100 cc. The thymol turbidity was 15.5 units and thymol flocculation 3 plus. Total protein content of the serum was 7.2 gm. per 100 cc.—3.8 gm. of albumin and 3.4 gm. of globulin.

During the next two weeks the icteric index declined to 8 units. However, spiking fever developed, with peaks up to 104 degrees F. accompanied by occasional chills. Because of the possibility of metastatic carcinoma of the liver, a biopsy specimen was taken by needle from the liver, and examination of it suggested the possibility of a subdiaphragmatic abscess. (See pathologist's report in later paragraph.) Upon operation a large localized subdiaphragmatic abscess was exposed, incised, and drained. The patient then became afebrile and asymptomatic and had good appetite. He was discharged from the hospital but was readmitted three months later because of return of fever and jaundice three days previously. Surgical exploration was carried out and the subdiaphragmatic abscess over the dome of the liver was again drained. No evidence of metastasis of carcinoma to the liver was observed, but as the gallbladder was distended and there were neoplastic nodules in the region of the common duct, cholecystojejunostomy was performed. Five weeks later the patient was discharged feeling more comfortable than at any time in the previous two years. A month and a half afterward, however, he was readmitted with complaint of severe subcostal pain on the right side, pain in the back, recurrence of jaundice and frequent nausea and vomiting for five days. The edge of the liver was palpable five fingerbreadths below the right costal margin but quality of the surface could not be determined because of ascites. The patient died three months later, slightly more than two and one-half years after onset of symptoms.

PATHOLOGIST'S REPORT

The specimen (which had been removed by needle) was a core of hepatic tissue and several smaller fragments consisting of irregular clusters of degenerating polymorphonuclear leukocytes and fibrin that were adjacent to but did not form part of the core of tissue. The sinusoids at the center of the lobules were dilated and the reticuloendothelial cells there were slightly hyperplastic. No changes were noted in the hepatic cells. The portal triads were unchanged.

DISCUSSION

At the time of the needle biopsy of the liver, the clinical diagnosis was recurrent carcinoma complicated by either obstructive cholangitis or metastatic carcinoma of the liver. There was no indication of subdiaphragmatic abscess. It is a custom in the hospital in which the patient was treated to refer such diagnostic problems related to the liver to a team of internists who are specifically interested in needle biopsy and trained in the technique. Details of the evaluation and preparation of the patient and of the technique have been published.[1] The needle biopsy was done successfully. Experts in the field of liver biopsy specifically admonish that, when a suppurative process is suspected in the right upper quadrant; either above or below the diaphragm, needle biopsy should not be done because of the risk of spreading the inflammatory process. Had this been suspected clinically in the present case, the procedure probably would not have been carried out. However, the subdiaphragmatic abscess remained localized to the right upper quadrant. Therefore, it must be concluded that in this patient the needle biopsy procedure did not alter the course of the infectious process.

Examination of the specimen led to suspicion that an extrahepatic abscess (probably subdiaphragmatic) was present, in light of the absence of evidence of an inflammatory disease in the core of hepatic tissue and the presence of extrahepatic fragments of necrotic acute inflammatory cells. In view of the absence of clinical evidence of disease of the abdominal wall, pleura or lungs, it was presumed that the inflammatory process lay between the abdominal wall and the hepatic capsule. This was borne out by observation at operation.

SUMMARY

A case report is presented wherein needle biopsy, used to assist in the differential diagnosis of hepatic disease, led to suspicion of the presence of a subdiaphragmatic abscess. This was confirmed by surgical exploration. Thrusting the needle through the abscess did not, in this case, cause extension of the inflammatory process.

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Pulmonary Paraffinoma Verified At Thoracotomy

Report of Two Cases

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Since 1925 when Laughlen[9] made the pioneer report on lipoid pneumonia, and Ikeda's[8] study in 1937 when the name paraffinoma was aptly given to a lung tumor made up of mineral oil, reports of many cases have appeared.[4,5,6,7] Most of the reports are of cases in which the tumor was noted in postmortem examination; few deal with verification of the tumor at the operating table. Brown and Biskind[2] in 1941 reported a case in which surgical removal of a paraffinoma was carried out. Berg and Burford[1] in 1950 reported six such cases; and Dailey in the same article commented upon three patients who had thoracotomy for mineral oil granuloma. Schneider[10] in 1949 wrote a detailed account on five cases. A year later Flick,[3] reporting a case in which surgical treatment was carried out, reemphasized the gross similarity between this lesion and carcinoma. The authors herewith add reports of two cases in which paraffinomas were removed at operation.

Case 1. A man 60 years of age entered the hospital in September 1950 because of fatigue and pain in the left anterior thoracic region of two months' duration. The pain occurred upon exertion and was relieved by rest. There were no other symptoms except occasional bouts of "acid indigestion," of which the patient had complained in 1947. At that time a small esophageal hiatal hernia had been observed roentgenographically.

In 1947, 1948 and 1949 the patient had used mineral oil daily for a laxative, but he had not used sprays or nose drops containing mineral oil.

The patient appeared to be in excellent health. Upon rectal examination it was noted that the prostate was moderately and diffusely enlarged. X-ray films of the chest were made (Figure 1), and the radiologist reported there was an area of infiltration approximately 3.5 x 4.0 cm. in the right middle lobe, a depression of the transverse fissure and evidence of minimal segmental atelectasis. The remainder of the lung field was clear. The radiologic diagnosis was: Infiltrating neoplastic lesion, right middle lobe.

Films of the gastrointestinal tract reconfirmed the presence of a small esophageal hiatal hernia.

Results of routine examination of the blood and urine were within normal limits, and no abnormalities were noted in an electrocardiogram. Papanicolaou studies of a small specimen of sputum were negative for tumor cells.

No abnormality was seen in a bronchoscopic examination. Material washed from the middle lobe bronchus and a specimen of tissue were negative for tumor cells.

Right thoracotomy was done. The lung was not adherent to surrounding tissue. On the diaphragmatic pleura was a mucoid, fibrinous-appearing series of plaques. The pulmonary ligament was thickened. A firm mass was felt in the center of the lower lobe, presenting on the visceral pleura next to the middle lobe where there were many oily white plaques 2.0 to 3.0 mm. in diameter. Under them was much "puckering" of the visceral pleura. In the middle lobe there was a similar mass presenting toward the lower lobe. Hilar nodes were not enlarged. The mediastinum and upper lobe were normal. Biopsy of material from the pleural plaques and from the tumors in the lung showed inflammatory tissue. Resection was not carried out, and the thoracic wound was closed.

Upon further microscopic examination of the tissue the pathologist reported: "chronic lipoid pneumonia, foreign body reaction, benign, right middle and lower lobes lung; paraffinoma."

The postoperative course was smooth.

X-ray films of the chest were made six weeks after operation, then seven months later and again a year and a half after operation and there were no significant changes in the lung during that time. The patient was in good health.

Case 2. A woman 61 years of age entered the hospital in September 1952 with a mild but persistent cough that raised very little sputum. The patient reported several episodes of "pneumonia" during the preceding few winters. She had taken Petrolagar daily for at least 15 years.

No evidence of disease was seen in x-ray films of the paranasal sinuses. A film of the chest showed a 3 cm. tumor in the region of the right middle lobe with some atelectasis peripheral to it (Figure 2). A bronchogram showed that the middle lobe bronchus was patent. No further evidence of disease was observed roentgenographically. Results of bronchoscopic examination and of study of bronchial washings were negative for disease and tumor.

Right thoracotomy was done. The pleura was free, although there were interlobar adhesions. There was a small mass in the right middle lobe anteriorly. This did not feel like a carcinoma. It was excised and upon microscopic study it was found to be inflammatory tissue. In the rest of the lobe there were small patches of atelectatic lung. The hilar nodes were not enlarged. There was a healed, hard scar at the apex of the upper lobe.

Upon microscopic examination of the lung tissue the pathologist reported: "Chronic lipoid pneumonia, foreign body reaction, benign, right middle lobe lung; paraffinoma."

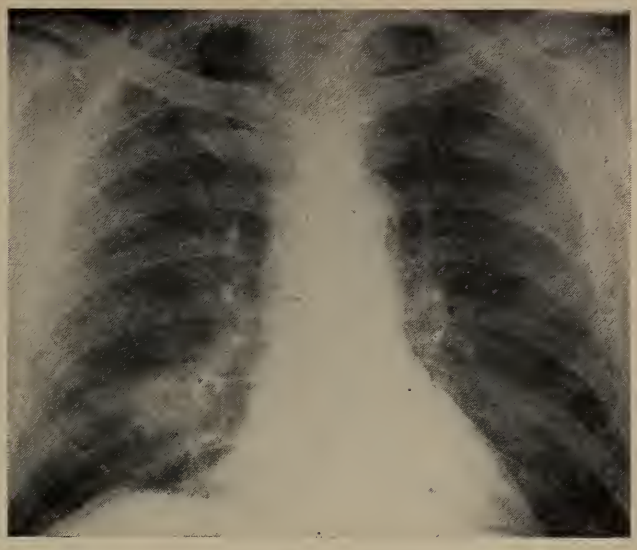


Figure 1—(Case 1) Area of infiltration in right middle lobe.

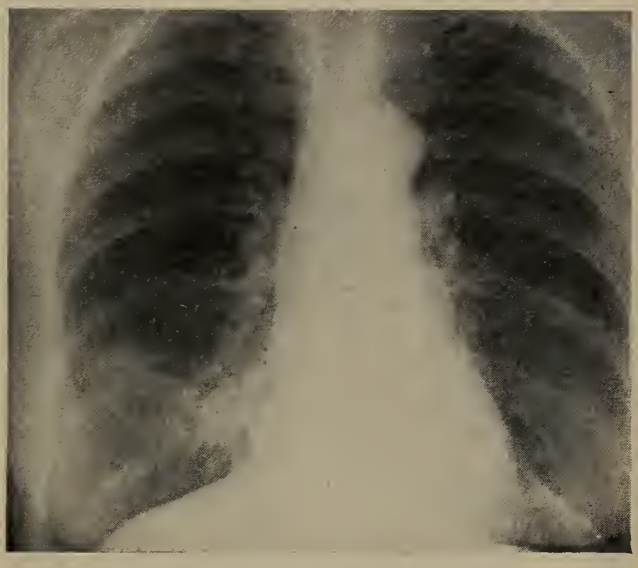


Figure 2—(Case 2) A tumor in the right middle lobe.

The postoperative course was smooth. No abnormality was noted in a film of the chest made a month after operation. The patient was in good health and no longer coughed.

COMMENT

Two patients, one 60 years and the other 61 years of age, with pulmonary mineral oil granulomas were subjected to exploratory thoracotomy to ascertain whether the tumor was malignant or benign. In both instances, by examination of frozen section of the tumor tissue the lesion was found to be non-malignant and conservative excision was carried out with good results.

The need to examine lesions of this kind is apparent. for no one can be certain preoperatively that they are not carcinoma.

Emphasis must be placed upon recognition, at the time of operation, that the disease is non-malignant, lest operation more extensive than is necessary be carried out, with sacrifice of good pulmonary tissue which is particularly important to patients in the older age groups.

300 Homer Avenue.

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LETTERS to the Editor . . .

An Unknown Bactericidal Serum Factor

AN IMPORTANT CONCLUSION from a study in rabbits of the serological effects of whole body x-irradiation is reported by Marcus and Donaldson* of the University of Utah. They report evidence of the existence of a normal bactericidal serum component thus far ignored by immunologic theorists.

Adult albino rabbits were subjected to one or two whole body x-irradiations with doses varying from 650 r to 725 r, given at a rate of 25 r per minute. Serums drawn from these rabbits before and after irradiation were titrated for their bactericidal power against highly dilute broth cultures of *B. subtilis*. They found that by the end of two hours' incubation 10 per cent normal rabbit serum will reduce the bacterial count from an average of 5,000 organisms per cc. to an average of but 6 organisms. In contrast, postirradiation rabbit serum will allow the count to increase to an average of 13,000 organisms per cc.

They found that the normal bactericidal action of rabbit serum is not reduced on the first postirradiation day. It is depressed by the fifth day and returns to normal by the twentieth day. Of even greater importance is their discovery that the greatly reduced bactericidal power is not accompanied by significant changes in normal antibody or complement titers. The substance inhibited or suppressed as a result of irradiation is apparently a wholly unknown bactericidal serum factor, the nature of which is now under investigation.

W. H. MANWARING, M.D.
Palo Alto, Calif.

*Marcus, S., and Donaldson, D. M.: Suppression of normal bactericidal action of rabbit serum following whole body x-irradiation, Proc. Soc. Exper. Biol. and Med., 83:184, May 1953.

California MEDICINE

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EDITORIAL

New Atmosphere

MANY CALIFORNIA PHYSICIANS sighed with relief when Earl Warren was appointed chief justice of the U. S. Supreme Court and was succeeded as Governor of California by Goodwin J. Knight.

This was especially true of physicians who have been given responsibility in legislative matters.

As governor, Earl Warren alienated all but a handful of California physicians by his espousal of a system of compulsory health insurance. Less than two years after he had taken office he promoted legislation which would have put the State of California into the practice of medicine. The legislative battle of 1945 will long be remembered in both legislative and medical circles; on a move to take the governor's proposal out of committee and debate it on the floor of the Assembly, the vote was 39 to 38 against such a move. While 41 votes were needed to make this proposal effective, the close vote was extremely uncomfortable.

Not content with the attitude of the representatives of the people as expressed in 1945, Governor Warren repeated his scheme in 1947, with little or no change from the original version. Again he lost. In 1949 he reintroduced the 1947 bill, with only the number changed.

Between sessions of the Legislature, the governor proclaimed that "California will have a system of state prepaid medical care insurance before I leave office as governor." Fortunately for the public and for physicians, this claim did not materialize.

The 1945 defeat of Governor Warren's proposal in the Legislature seemed to work a change in his attitude toward the medical profession. Where formerly he had sought and considered professional leaders' opinions on medical appointments, he discarded this system when his pet measure was defeated. From then on his appointments to such important bodies as the Board of Medical Examiners and the State Board of Health were made without consultation with recognized medical leaders. Surely he must have had some advice on these appointments but its source was never disclosed.

Now Governor Goodwin J. Knight is the state's chief executive and many physicians have expressed the warm, friendly feeling for him that they have held for a number of years. Governor Knight is a recognized businessman, a former Superior Court judge, an able attorney and an experienced administrator. As lieutenant governor, for some years he has presided over the State Senate and has handled his duties in splendid fashion.

Governor Knight has gone out of his way to meet the people of California and to know and understand their problems. He has consistently favored sound professional legislation and has gone on record as a supporter of high professional standards in the practice of medicine and of law. As to compulsory health insurance, he has openly and regularly opposed the idea and measures that would impose it.

The arrival of Governor Knight in the top position in California has brought a new atmosphere into the management of the state. The governor has been prompt in replacing officials whose administrations have come under fire and it is evident that he is able to attract substantial executives to make up his official family. While his incumbency is still new, and while the demands upon his time and his prerogatives have been heavy, his history indicates that the medical profession will now find in Sacramento a governor who is not inclined to reach so far to grasp the "popularity" of the moment that he loses his footing on firm ground.

The change is certainly welcome.

California MEDICAL ASSOCIATION

NOTICES & REPORTS

Council Meeting Minutes

Tentative Draft: Minutes of the 402nd Meeting of the Council of the California Medical Association, Los Angeles, October 17, 1953.

The meeting was called to order by Chairman Shipman in Conference Room No. 1 of the Biltmore Hotel, Los Angeles, at 9:30 a.m., Saturday, October 17, 1953.

Roll Call:

Present were President Green, President-elect Morrison, Secretary Daniels, Speaker Charnock, Vice-Speaker Bailey and Councilors West, Sampson, Dau, Shipman, Lum, Bostick, Teall, Varden, Carey, Kirchner and Reynolds.

Absent for cause, Editor Wilbur and Councilors Wheeler, Loos, Pearman, Ray, Heron and Frees.

A quorum present and acting.

Also present by invitation were Messrs. Hunton, Thomas, Clancy, Gillette and Pettis of C.M.A. staff, legal counsel Hassard, Ben H. Read of the Public Health League of California, associate legal counsel Louis M. Welsh, county executive secretaries Waterson, Foster, Thompson, Wood and Donovan, K. L. Hamman of California Physicians' Service, Dr. Malcolm Merrill, Assistant State Director of Public Health, and Drs. Francis J. Cox, Henry A. Randel and Eugene M. Hoffman.

1. *Minutes for Approval:*

On motion duly made and seconded, minutes of the 401st Council meeting, held July 25, 1953, were approved.

2. *Membership:*

(a) A report of membership as of October 14, 1953, was presented and ordered filed.

(b) On motion duly made and seconded, 116 members who had become delinquent and had since paid their current dues were voted reinstatement.

(c) On motion duly made and seconded in each instance, three applicants were voted Retired Membership. These were Frank R. Missner of Alameda-Contra Costa and M. H. Ross and Homer Walker of Los Angeles.

(d) On motion duly made and seconded in each instance, 13 applicants were voted Associate Membership. These were H. H. Appeldorn, Jr., Juan A. Arcellana, E. George Beer, Wesley Fry, Harry J. Misch, Richard S. Silvis, and Harry G. Smith, Alameda-Contra Costa; H. M. F. Behnemann, Riverside; F. L. Eldridge, Lincoln F. Putnam, and Gilbert A. Webb, San Francisco; Kathleen Mahoney, Sonoma; John M. Pope, Ventura.

(e) On motion duly made and seconded in each instance, 13 members were voted a reduction of dues because of postgraduate study or protracted illness.

(f) On motion duly made and seconded, it was voted to recommend to the House of Delegates the election of Dr. William H. Geistweit, Jr., of San Diego to Honorary Membership because of his 28 years of devoted service as secretary of the San Diego County Medical Society.

JOHN W. GREEN, M.D. President
ARLO A. MORRISON, M.D. President-Elect
DONALD A. CHARNOCK, M.D. Speaker
WILBUR BAILEY, M.D. Vice-Speaker
SIDNEY J. SHIPMAN, M.D. Council Chairman
ALBERT C. DANIELS, M.D. Secretary-Treasurer
DONALD D. LUM, M.D. . Chairman, Executive Committee
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(g) On motion duly made and seconded, it was voted to authorize the acceptance of Affiliate Memberships on the basis of a fiscal year starting July 1.

(h) Report was made on a disciplinary hearing in Los Angeles County which resulted in the expulsion of a member. The member has appealed the decision to the Council.

On motion duly made and seconded, it was voted to appoint President-elect Morrison as a conciliation committee of one to attempt a reconciliation.

On motion duly made and seconded, it was voted to set the date for the hearing of the appeal as December 11, 1953, in San Francisco, with authority granted the chairman to defer the appeal if that time and place were not suitable for the appellant.

3. *Financial:*

(a) A report of bank balances as of October 14, 1953, was received and ordered filed.

(b) On motion duly made and seconded, it was voted to make available to the Committee on the Unlawful Practice of Medicine the funds accumulated in the Herzstein Bequest Fund.

(c) On motion duly made and seconded, and by a three-fourths vote, it was voted to continue the $1,000 annual subscription to the California State Chamber of Commerce.

4. *Legal Department:*

(a) Mr. Hassard reported on the status of the litigation between Complete Service Bureau and the San Diego County Medical Society. The judgment of the appeals court was appealed for rehearing by Complete Service Bureau and the rehearing denied. An appeal is now planned by Complete Service Bureau to the State Supreme Court.

(b) On motion duly made and seconded, Mr. Hassard was authorized to enter the Association as amicus curiae in a Los Angeles lawsuit involving the payment of county funds to medical schools in return for services performed in staffing county institutions.

(c) Mr. Hassard reported on an opinion he had written a member relative to the offering of a prepayment medical care service.

5. *State Department of Public Health:*

Dr. Malcolm Merrill reported that the incidence of poliomyelitis in California is higher than in the past two years but that the percentage of paralytic cases has dropped from 71 to 50. Contacts of 2,379 cases have received inoculations of gamma globulin. No mass inoculations have been made in California.

Dr. Merrill also reported briefly on encephalitis and stated that departmental studies are now under way to determine the utilization of maternity beds in hospitals, with a view toward achieving a greater utilization of these beds for other cases and thus decreasing the estimated total beds needed in a community.

6. *Disability Insurance:*

Councilor Kirchner, chairman of the special insurance committee on group accident health and insurance, introduced Mr. Ted Templin of Charles O. Finley & Co., brokers under the program. Mr. Templin reported that more than 2,700 applications had been received to date and that the broker would make every effort to qualify the program with a 50 per cent participation. He also responded to questions raised by members of the Council.

7. *Committee on Industrial Accident Commission:*

Dr. Francis J. Cox, chairman of the Committee on Industrial Accident Commission, reported that progress was being made on establishment of a revised industrial fee schedule.

On motion duly made and seconded, it was unanimously voted to express to Dr. Cox the warm commendation of the Council for an outstanding piece of work by his committee.

8. *California Physicians' Service:*

Mr. K. L. Hamman reported that California Physicians' Service has now completed the process of separation from Blue Cross in Southern California. The C.P.S. membership is now about 605,000 and is destined to increase, he said. Mr. Hamman commented on the C.P.S. financial statement and answered questions from the Councilors.

9. *Medical Services Commission:*

Councilor Carey reported that the Medical Services Commission was now using the publication *Rx Reading* to disseminate information. He stated that a set of principles for evaluating health insurance contracts was nearly ready to be sent out for opinions by members of the Association. Dr. Carey also suggested that tape recordings on health insurance and other matters be made available to the county societies.

Councilor Teall reported that the Commission wanted to urge the establishment in each county society of a special committee to study and to gain a better understanding of health insurance. On motion duly made and seconded, it was voted to authorize the Commission to contact the county societies for this purpose and to bring in its report to the House of Delegates.

10. *Advisory Planning Committee:*

Mr. Hunton reported that the Advisory Planning Committee had voted to recommend to the Council the appointment as a committee member of Mr. George Foster, executive secretary of the Sacramento

Society for Medical Improvement. On motion duly made and seconded, it was voted to appoint Mr. Foster to membership on this committee.

11. *Audio-Digest Tape Recordings:*

A proposal by Mr. Jerry L. Pettis to turn over to the Association the sponsorship and ownership of Audio-Digest, a tape recording procedure, was considered. On motion duly made and seconded, it was voted to assume the sponsorship of Audio-Digest, the Executive Committee to work out the details so that the matter could be brought before the House of Delegates.

12. *Committee on Relations with Other Professions:*

A letter from Dr. Wayne Pollock, committee chairman, reported on meetings with representatives of the California Osteopathic Association. He asked that legal counsel be authorized to meet with legal counsel of the other association with a view toward setting forth the procedures possible in looking toward a single type of licensure. On motion duly made and seconded, Mr. Hassard was authorized to proceed along these lines.

13. *Solano County Tuberculosis Survey:*

On motion duly made and seconded, the chairman was authorized to appoint members of a joint committee of the Association, the State Department of Public Health and the California Tuberculosis & Health Association, to conduct a survey of tuberculosis needs and treatment in Solano County.

14. *Contract Practice—Imperial County:*

Councilor Varden reported on a situation in Imperial County, where a physician has apparently contracted with an insurance carrier or an insurance agency to provide medical care for Mexican nationals admitted to the county as agricultural workers. Mr. Hassard was requested to investigate.

15. *Annual Session Exhibits:*

On motion duly made and seconded, it was voted not to offer annual session technical exhibit space to applicants in the field of finance.

16. *School Health Conference:*

Secretary Daniels reported on a meeting he had attended on the subject of school health. He recommended that the Association sponsor a School Health Conference. On motion duly made and seconded, this recommendation was adopted.

17. *Committee on Medical Economics:*

Dr. Lum read a report of the Committee on Medical Economics, in which several recommendations were made for Council consideration. It was duly moved, seconded and voted to distribute copies of the report to the Councilors for consideration at the next meeting.

18. *Epilepsy Studies:*

Dr. Charnock reported that the Children's Hospital Society of Los Angeles has instituted some epilepsy studies and opened a diagnostic clinic. The society plans to spread this activity to neighboring counties.

19. *Rural Medical Care:*

On motion duly made and seconded, it was voted to lift from the table Resolution No. 7 from the 1953 House of Delegates, relative to securing physicians for rural areas, and to refer it to the Rural Health Committee.

20. *House of Delegates:*

On motion duly made and seconded, it was voted to authorize Dr. Charnock to investigate the proposed installation of an electrical roll call board for the House of Delegates and to report back to a later Council meeting.

21. *Civil Defense:*

On motion duly made and seconded, it was voted to defray one-half the expenses of one California representative to a nationwide meeting on civil defense to be held in Ohio.

22. *Resolutions in House of Delegates:*

Councilor Teall discussed the possibility of receiving copies of resolutions for the House of Delegates in advance so that any ambiguities or technical errors might be corrected before their presentation. On motion duly made and seconded, it was voted to authorize Dr. Teall and Mr. Hassard to confer on possible by-law amendments for consideration by the Council.

23. *Psychology:*

On motion duly made and seconded, it was voted to appoint a committee to confer with other groups and the Committee on Public Policy and Legislation on the subject of possible legislation relative to the practice of psychology.

24. *1954 Annual Session:*

On motion duly made and seconded, Dr. Lawrence White was appointed chairman of the Committee on Local Arrangements for the 1954 Annual Session, Dr. White to select his other committee members.

25. *Time and Place of Next Meeting:*

It was agreed that the next Council meeting would be held in San Francisco on Friday, December 11, 1953.

Adjournment:

There being no further business to come before it, the meeting was adjourned at 5:35 p.m.

SIDNEY J. SHIPMAN, M.D., *Chairman*
ALBERT C. DANIELS, M.D., *Secretary*

In Memoriam

Bakewell, Benjamin. Died in Santa Barbara, September 3, 1953, aged 75, of coronary artery disease. Graduate of the University of California Medical School, Berkeley-San Francisco, 1902. Licensed in California in 1902. Doctor Bakewell was a retired member of the Santa Barbara County Medical Society.

✣

Beebe, Jay L. Died in Laguna Beach, October 21, 1953, aged 79. Graduate of Northwestern University Medical School, Chicago, Illinois, 1903. Licensed in California in 1903. Doctor Beebe was a retired member of the Orange County Medical Association.

✣

Duncan, Will C. Died in Los Angeles, September 24, 1953, aged 70. Graduate of Northwestern University Medical School, Chicago, Illinois, 1915. Licensed in California in 1917. Doctor Duncan was a member of the Los Angeles County Medical Association.

✣

Fergusson, Frederick W. Died in Lodi, September 5, 1953, aged 61, of coronary occlusion. Graduate of Northwestern University Medical School, Chicago, Illinois, 1918. Licensed in California in 1949. Doctor Fergusson was a member of the San Joaquin County Medical Society.

✣

Garrison, J. Frank. Died in Sawtelle, September 24, 1953, aged 76. Graduate of the University of Minnesota Medical School, Minneapolis, 1900. Licensed in California in 1917. Doctor Garrison was a retired member of the Los Angeles County Medical Association.

✣

Gobar, Franklin H. Died in Fullerton, October 17, 1953, aged 63, of cerebral vascular accident. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1924. Licensed in California in 1924. Doctor Gobar was a member of the Orange County Medical Association.

✣

Huish, Frederic G. Died in Berkeley, October 18, 1953, aged 41, of acute myocardial infarction. Graduate of Stanford University School of Medicine, Stanford University-San Francisco, 1943. Licensed in California in 1943. Doctor Huish was a member of the Alameda-Contra Costa Medical Association.

✣

Lauder, Clark H. Died in Arcadia, September 30, 1953, aged 69. Graduate of State University of Iowa College of Medicine, Iowa City, 1909. Licensed in California in 1922. Doctor Lauder was a retired member of the Los Angeles County Medical Association.

✣

Lindsay, Harry C. L. Died in Pasadena, September 9, 1953, aged 70, of generalized arteriosclerosis. Graduate of the University of Western Ontario Faculty of Medicine, London, Canada, 1909. Licensed in California in 1926. Doctor Lindsay was a member of the Los Angeles County Medical Association.

McIntosh, Arthur M. Died in Berkeley, September 14, 1953, aged 75, of generalized arteriosclerosis. Graduate of the University of California Medical School, Berkeley-San Francisco, 1900. Licensed in California in 1900. Doctor McIntosh was a member of the Alameda-Contra Costa Medical Association, and a life member of the California Medical Association.

✣

Oppenheimer, Arnold. Died in San Francisco, August 20, 1953, aged 61, of coronary thrombosis. Graduate of Universität Heidelberg Medizinische Fakultät, Baden, Germany, 1919. Licensed in California in 1941. Doctor Oppenheimer was a member of the San Francisco Medical Society.

✣

Peters, Charles E. Died in Castro Valley, August 1, 1953, aged 64, of coronary occlusion. Graduate of Ohio State University College of Medicine, Columbus, 1912. Licensed in California in 1919. Doctor Peters was a member of the Alameda-Contra Costa Medical Association.

✣

Robinson, Shelby L. Boynton. Died in Los Angeles, August 18, 1953, aged 63, of terminal pneumonia. Graduate of Meharry Medical College, Nashville, Tennessee, 1909. Licensed in California in 1932. Doctor Robinson was a member of the Los Angeles County Medical Association.

✣

Sornsen, Antone A. Died in Los Angeles recently, aged 82. Graduate of Keokuk Medical College, Iowa, 1894. Licensed in California in 1920. Doctor Sornsen was a member of the Los Angeles County Medical Association.

✣

Stevens, George M. Died in Los Angeles, September 22, 1953, aged 83. Graduate of Rush Medical College, Chicago, Illinois, 1894. Licensed in California in 1907. Doctor Stevens was a retired member of the Los Angeles County Medical Association.

✣

Stout, Gurn T. Died by drowning at Laguna Beach, September 13, 1953, aged 54. Graduate of the University of Nebraska College of Medicine, Omaha, 1926. Licensed in California in 1927. Doctor Stout was a member of the Los Angeles County Medical Association.

✣

Taylor, Leland H. Died in Oakland, September 21, 1953, aged 60. Graduate of Harvard Medical School, Boston, Massachusetts, 1923. Licensed in California in 1926. Doctor Taylor was a member of the Alameda-Contra Costa Medical Association.

✣

Valens, John D. Died October 7, 1953, aged 38, in an automobile collision in Idaho. Graduate of University of Manitoba Faculty of Medicine, Winnipeg, Canada, 1941. Licensed in California in 1943. Doctor Valens was a member of the Stanislaus County Medical Society.

✣

Vaught, John L. Died in San Francisco, October 18, 1953, aged 42. Graduate of Creighton University School of Medicine, Omaha, Nebraska, 1938. Licensed in California in 1939. Doctor Vaught was a member of the Fresno County Medical Society.

NEWS & NOTES

NATIONAL • STATE • COUNTY

ALAMEDA

Dr. James B. Graeser of Oakland was elected president of the Alameda-Contra Costa Medical Association at the annual meeting of the organization last month. Formerly vice-president, he succeeds Dr. Lester B. Lawrence of Oakland. Dr. Harold P. Maloney of Oakland was elected vice-president, and Dr. Bernard B. Gadwood of Richmond succeeded Dr. Grant Ellis of Berkeley as secretary-treasurer.

* * *

Anita H. Payne, Ph.D., and Lola S. Kelly, Ph.D., research fellows engaged in postdoctoral work at the Donner Laboratory, University of California at Berkeley, have received the $2,000 **Kappa Kappa Gamma Cancer Research Award** for outstanding achievement by women in the field of cancer research.

The award was announced by Mrs. E. Granville Crabtree of Boston, national president of Kappa Kappa Gamma Sorority, which provided the award money, and Louis H. Seagrave, chairman of the board of the California Institute for Cancer Research, which supervised the contest.

The research award was established a year ago in memory of Mrs. Marion Howell Tompkins, a member of the Pasadena alumnae association of Kappa Kappa Gamma.

The prize-winning paper submitted by Drs. Payne and Kelly was the most recent of a series of joint papers covering their study of postirradiation sensitivity and behavior of malignant tumors.

* * *

Dr. Joseph Stokes, Jr., professor in the department of pediatrics at the University of Pennsylvania, has accepted an invitation to be visiting lecturer for the third annual **Clifford Sweet Lectureship** at Children's Hospital of the East Bay, Oakland, scheduled for May 26-28, 1954.

The lectureship meetings are held to do honor to the services of Dr. Clifford Sweet, who was chief of medicine at the hospital for 30 years and now is emeritus chief of medicine.

LOS ANGELES

The United Cerebral Palsy-Max Weinstein award for "outstanding scientific achievement in cerebral palsy" was presented this year to **Dr. H. W. Magoun,** chairman of the department of anatomy, University of California School of Medicine, Los Angeles. Presented at the annual convention of United Cerebral Palsy in New York City last month, the award to Dr. Magoun was for his "studies of factors promoting regeneration of nerve fibers in the central nervous system and of the physiology of the cerebral cortex and basal ganglia in relation to cerebral palsy." The award is a silver plaque and $1,000 provided in the will of the late Mr. Weinstein.

The Sixth Annual **Mid-Winter Radiological Conference,** sponsored by the Los Angeles Radiological Society, will be held at the Ambassador Hotel, Los Angeles, on Saturday and Sunday, February 20 and 21, 1954.

The out-of-state speakers will be Dr. Eugene P. Pendergrass, Philadelphia, Dr. U. V. Portman, Tucson, Dr. Marcy L. Sussman, Phoenix, and Dr. Frederic E. Templeton, Seattle.

A banquet preceded by cocktails will be held at the Ambassador Hotel on Saturday evening, February 20.

Conference reservations may be made through Dr. Harold P. Tompkins, 658 South Westlake Avenue, Los Angeles 57, California. The conference fee is $20 and the dinner will be $7.50 per plate. Courtesy cards for the conference are available to radiological residents and radiologists in military service by pre-registrations.

* * *

The 1954 College of Medical Evangelists **Alumni Postgraduate Convention** will be held February 23 to 25 in Los Angeles. The three-day convention is open to all physicians regardless of their school affiliation, and the program will be made up primarily to serve general practitioners.

MERCED

Dr. Frank Brewer, formerly chief of the bureau of venereal disease control of the California State Department of Public Health, on December 1 became health officer of Merced County and medical director of the Merced General Hospital. He was appointed by the county's board of supervisors in October.

SAN BERNARDINO

Dr. Leonard Taylor of San Bernardino has been elected president of the San Bernardino County Medical Society, succeeding Dr. C. Norman Abbott of Ontario. Dr. Harold R. Morris of San Bernardino was elected president-elect, and Dr. Gerald M. Mraz of Fontana, second vice-president. Dr. Carl M. Hadley, San Bernardino, was reelected secretary-treasurer.

SAN FRANCISCO

Dr. John Upton of San Francisco, chairman of the Blood Bank Commission of the California Medical Association, was elected vice-president of the American Association of Blood Banks at the recent meeting of that organization in Chicago. Mrs. Charles D. Hemphill, director of Irwin Memorial Blood Bank, San Francisco, was elected treasurer of the association.

* * *

The American Geriatrics Society will hold its annual meeting at the Fairmont Hotel in San Francisco, June 17 to 19, 1954. All physicians interested in geriatrics are cordially invited to attend. Any who would like to present a paper should submit six copies of the title of the paper, with an abstract not to exceed 300 words, to the secretary of the society, Dr. Malford Thewlis, 25 Mechanic Street, Wakefield, R. I., not later than February 1, 1954.

GENERAL

Announcement of the formation of the **American Foundation for Allergic Diseases** was made recently by Dr. Horace S. Baldwin of New York, president of the foundation. Headquarters are at 525 Lexington Avenue, in New York City.

"The need for some central organization to stimulate and coordinate activity in the allergy field has been manifest for some time," Dr. Baldwin said, since "specialized facilities for research, medical education and treatment lag far behind those for many other chronic conditions."

Dr. George Piness of Los Angeles is a trustee of the new organization.

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The seventh annual meeting of the **Western Society for Clinical Research** will be held January 29 and 30, 1954, at Portland, Oregon.

Information regarding the meeting may be obtained from Dr. Herbert N. Hultgren, secretary-treasurer, Stanford Hospital, San Francisco 15.

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Twenty-seven million people are now enrolled in **Blue Shield medical care plans,** according to an announcement by the Blue Shield Commission in Chicago. California Physicians' Service is one of the physician-sponsored organizations included in Blue Shield. At a ceremony commemorating the signing of the 27 millionth subscriber, Dr. Frederick H. Good, president of the Colorado Medical Service (Blue Shield) and a member of the national Blue Shield Commission, said, in part, "The enrollment of 27,000,000 in Blue Shield plans, with growth continuing at a rapid rate, testifies adequately to the public's acceptance of this form of **prepayment for medical care,** sponsored by the medical profession itself."

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Questionnaires **seeking data on blood pressure** of patients over 65 years of age have been sent to some 17,000 physicians as a part of a study being carried on by Dr. Arthur M. Master, Dr. Harry L. Jaffe and Mr. Herbert Marks of the Metropolitan Life Insurance Company, all of New York City.

The statistical study is sponsored by the New York Heart Association, the Mount Sinai Hospital, New York, and Metropolitan Life. The American Medical Association has given aid to the project. The data will be used to determine with greater accuracy what "normal" blood pressure is for persons in the higher age brackets, in order to provide a better basis for clinical evaluation of hypertension in the aged.

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Dr. Merlin Newkirk of Southgate was installed as president of the California Academy of General Practice at the annual meeting of the organization held October 25-27 in San Diego, and **Dr. John G. Walsh** of Sacramento was elected president-elect. **Dr. A. J. Franzi** of San Francisco was reelected secretary-treasurer, and **Dr. Joseph W. Telford,** San Diego, speaker of the congress of delegates. Newly elected directors are **Dr. Elliot Colby** of San Diego and **Dr. John T. McNally,** Stockton. **Dr. Carroll B. Andrews** of Sonoma was elected a delegate to the American Academy of General Practice.

Almost 1100 physicians attended the meeting, and total registration was more than 1800. The 1954 annual meeting will be held October 24-27 at the Statler Hotel, Los Angeles.

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Dr. Walter Rapaport, formerly superintendent of Agnew State Hospital, has been appointed director of the California State Department of Mental Hygiene by Governor Goodwin Knight. Dr. E. H. Crawfis, who has served in that capacity since the resignation of Dr. Frank F. Tallman several months ago, will return to his former position as deputy director of medical services of the department.

POSTGRADUATE EDUCATION NOTICES

RESEARCH STUDY CLUB OF LOS ANGELES

23rd Annual Clinical Convention of Ophthalmology and Otolaryngology

Date: January 18 through January 29, 1954. Each applicant must be a member in good standing of the American Medical Association in order to become eligible for attendance.

Fee: $100.00.

Contact: Pierre Violé, M.D., Treasurer, 1930 Wilshire Boulevard, Los Angeles 5, Calif.

UNIVERSITY OF CALIFORNIA AT LOS ANGELES

In Los Angeles

Dermatology in General Practice (limited to 20 students).

Spring dates: Feb. 17 to March 24.

Fee: $30.00.

General Surgery.

Date: February 3 through April 7, 1954. (Wednesday evenings, 7:30-9:30.)

Dermatology Conference.

Date: February 11, 12, 1954.

Fee: $35.00.

Anesthesiology.

Date: Spring, 1954.

Fee: Details to be announced.

Contact: Dr. Thomas H. Sternberg, Head of Postgraduate Instruction, Medical Extension, University of California, Los Angeles 24, California.

UNIVERSITY OF CALIFORNIA, SAN FRANCISCO

Microscopy and Photomicrography.

Date: January 14 to June 3, 1954.

Contact: Office of Medical Extension, University of California School of Medicine, University of California Medical Center, San Francisco 22, California.

STANFORD UNIVERSITY SCHOOL OF MEDICINE

Ophthalmology Conference. Registration will be open to physicians who limit their practice to the treatment of diseases of the eye; or eye, ear, nose and throat. Registration limited to thirty physicians. Instructors will be Dr. A. Edward Maumenee, Dr. Dohrmann K. Pischel, Dr. Jerome W. Bettman, Dr. Max Fine, Dr. Earle H. McBain, and Dr. Arthur J. Jampolsky.

Contact: Office of the Dean, Stanford University School of Medicine, 2398 Sacramento St., San Francisco 15, California.

COLLEGE OF MEDICAL EVANGELISTS

Anesthesiology (4 months). Vacancy occurs each two months. Facilities limited to two students. Tuition: $300.00. Dr. Forrest E. Leffingwell and Associates.

Surgical Diseases of the Peripheral Vascular System (7 periods). Tuesdays: 7:00-8:30 p.m., Jan. 5 through Feb. 16, 1954. Tuition: $30.00. Dr. Carl H. Talmage and Associates.

Differential Diagnosis of Internal Diseases (12 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital, Jan. 5 through March 30, 1954. Tuition: $50.00. Dr. Julius Bauer.

Dermatology (12 periods). Wednesdays: 8:00-9:30 p.m., Jan. 6 through March 24, 1954. Tuition: $40.00. Dr. Clement E. Counter and Associates.

General Urology (9 periods). Wednesdays: 8:00-9:30 p.m., Jan. 6 through March 3, 1954. Tuition: $35.00. Drs. Roger W. Barnes, R. Theodore Bergman and Associates.

Management of Infertility (8 periods). Thursdays: 7:30-9:00 p.m., Jan. 7 through March 4, 1954. Tuition: $30.00. Drs. A. R. Abarbanel, Ralph J. Thompson, Sr., and Associates.

Otolaryngology (8 periods). Tuesdays: 8:00-9:30 p.m., Feb. 9 through March 30, 1954. Tuition: $30.00. Dr. H. James Hara and Associates.

Varicose Veins (6 periods). Tuesdays: 7:00-9:00 p.m., March 2 through April 13, 1954. Tuition: $25.00. Dr. Carl H. Talmage and Associates.

Histology and Histopathology of the Eye (15 periods). Wednesdays: 7:30-9:30 p.m., March 3 through June 9, 1954. Tuition: $60.00. Dr. I. G. Sommers.

Gynecology (10 periods). Wednesdays: 8:00-9:00 a.m., March 24 through May 26, 1954. Tuition: $30.00. Dr. Dell D. Haughey and Associates.

Operative Surgery (12 periods). Wednesdays: 9:30 a.m.-12:00 m., March 24 through June 9, 1954. Hunterian Laboratory and L. A. C. G. H. Tuition: $200.00. Dr. Harry A. Davis.

Minor Orthopedic Surgery (8 periods). Thursdays: 8:00-9:30 p.m., April 1 through May 20, 1954. Tuition: $30.00. Dr. Alonzo J. Neufeld and Associates.

Surgical Diseases of Children (4 periods). Tuesdays: 11:00-12:00 a.m., April 6 through April 27, 1954. Tuition: $20.00. Dr. J. Norton Nichols.

Endocrinology (8 periods). Tuesdays: 8:00-9:30 p.m., Los Angeles County General Hospital, April 6 through May 25, 1954. Tuition: $30.00. Dr. Julius Bauer.

Thoracic Surgery (8 periods). Wednesdays: 8:00-9:30 p.m., Los Angeles County General Hospital, April 14 through June 2, 1954. Tuition: $30.00. Dr. Lyman A. Brewer.

Diseases and Injuries of Bones and Joints (4 weeks). Full time, July 5 through 30, 1954. Dr. Taylor's Office and various hospitals. Tuition: $100.00. Drs. G. Mosser Taylor, Alonzo J. Neufeld, and Associates.

Unless otherwise stated or arranged, courses will be held in Osler House. corner State and Michigan Avenues.

Contact: Chairman, Section on Graduate and Postgraduate Medical Education, College of Medical Evangelists, 312 North Boyle Avenue, Los Angeles 33. California.

C.M.A. REGIONAL AND MEDICAL INSTITUTES

North Coast Counties, Santa Rosa, February 11-12, 1954.

San Joaquin Counties, Fresno, March 4-5, 1954.

West Coast Counties, Santa Barbara, March 18-19, 1954.

Sacramento Valley Counties, Sacramento, April 1-2, 1954.

Southern Counties, Palm Springs, April 22-23, 1954.

SEMINARS OF THE ALUMNI COMMITTEE OF THE CHILDREN'S HOSPITAL, SAN FRANCISCO

January 23, 1954—The Problems of Prematurity and the Newborn Infant.

March 30, 1954—Acute and Chronic Infections and the Choice of Antibiotics in Treatment.

April 24, 1954—Childhood Ecology, with a discussion of physical, mental and emotional growth and development of the young child; the effects of deprivation of maternal care, and the impact of environment on the child.

A fee of $15.00 will be charged for attendance at all the seminars and those who wish to have further details or be on the mailing list for such details may write to: H. E. Thelander, M.D., Children's Hospital, 3700 California Street, San Francisco.

INFORMATION

New Vaccination Certificates Issued For International Travel

A NEW "International Certificates of Vaccination" form has been issued by the U. S. Public Health Service and has been in use since July 14. This new official record of a traveler's compliance with immunization requirements supersedes the old "International Certificate of Inoculation and Vaccination." The old form, however, is valid until the expiration date of the recorded vaccinations. Like the old form, the new one provides space for certificates of smallpox, yellow fever, and cholera vaccinations, as well as space for recording other immunizations such as for typhus, typhoid-paratyphoid, plague, and tetanus, which are not at present required. The new form is issued to the traveler at the time of application for a passport at the offices of the Clerks of the Court and Passport Agencies of the Department of State located in Boston, Chicago, New Orleans, New York and San Francisco. This gives the traveler more time for completion of his immunizations than he had with the old form which he received at the time of passport issuance. Persons going into countries that do not require a passport may obtain the form from local or state health departments or from facilities of the Public Health Service.

Health departments, travel agencies and others who desire a supply of the certificates may obtain them, as in the past, from the Superintendent of Documents, U. S. Government Printing Office, Washington 25, D. C., at a cost of 5 cents per copy or $2.50 per 100.

The new vaccination certificate form complies with the International Sanitary Regulations which went into effect in October, 1952, is recognized by all the countries governed by these regulations, and is approved by the World Health Organization. The text of the certificate is in English and French but data may be recorded in any language.

All changes from the old form work to the convenience of travelers. The principal ones are:

The cholera certificate becomes valid beginning six days after the first injection or immediately in the case of revaccination. The old form required that the series be completed. (The type of vaccine being used in this country provides maximum protection only after the second injection, so international travelers will be advised to complete the series.)

The smallpox certificate becomes valid immediately on revaccination, whereas previously a 14-day wait was required. Primary vaccinations must still be inspected and the results recorded.

Smallpox and cholera vaccination certificates will be certified by local health officers as in the past, but the signature of the certifying officer is no longer necessary, and signature alone is not acceptable. Health officers must use their official stamps; if they do not have one they should prepare a special stamp for the purpose of certifying these documents.

The period of validity for the yellow fever vaccination certificate has been extended from four to six years. As before, yellow fever vaccination certificates issued in the United States are valid in international travel only when the inoculation is obtained from a vaccination center designated by the Public Health Service.

IMMUNIZATION PROCEDURES IN EFFECT IN THE PUBLIC HEALTH SERVICE

The following persons may be immunized without cost at Public Health Service stations:

1. Persons who by law are beneficiaries of the Public Health Service. This includes American seamen, members of the U. S. Coast Guard and their dependents, and certain other classes of beneficiaries entitled by law to the benefits of the Public Health Service. It does not include veterans, per se—that is, the fact that an applicant is a veteran does not in itself make him eligible for this service.

2. United States Government officers, employees, and their dependents leaving for foreign areas when traveling under official orders.

3. Dependents of Army, Air Force, Navy and Marine Corps personnel traveling under official orders to foreign countries.

4. Any person requiring immunization for yellow fever. (Yellow fever immunizations are obtainable only at Public Health Service stations.)

Persons entitled to immunization (other than yellow fever) by this Service may be furnished any of the usual immunizations. Members of the general public who receive yellow fever inoculations here are not entitled to other immunizations by this Service. Such immunizations (for example, typhoid, smallpox) should be obtained elsewhere. Persons not eligible as above may obtain immunization against diseases other than yellow fever from:

1. State or local health departments, or

2. A private physician. Such immunizations should be certified to by the *local* health authority that has jurisdiction over the area *where the private physician practices.*



THE PHYSICIAN'S *Bookshelf*

MODERN TREATMENT—A Guide for General Practice. By 53 authors; edited by Austin Smith, M.D., editor of the Journal of the American Medical Association; and Paul L. Wermer, M. D., Secretary, Committee on Research, American Medical Association. Paul B. Hoeber, Inc., New York. 1146 pages, $20.00.

The intention of this book is to provide the general practitioner with a useful and authoritative guide to the common clinical problems in therapy. In each discussion, attention is focused on the most effective treatment for the condition in the judgment of its author and each chapter is intended to be sufficiently complete to stand by itself. The editors have attempted "to take account of all factors and provide sufficient information to enable the practitioner to adapt the best available treatment to the needs of each individual patient."

A few commonly encountered conditions such as alcoholism and drug addiction have been omitted deliberately. The reason given is that "much more experience is needed to permit satisfactory evaluation of therapeutic and social measures now under investigation." The reviewer cannot agree with either the rationale or the reasoning behind this statement. The practitioner needs help in treating such conditions particularly.

The arrangement of the book seems somewhat haphazard. It starts out properly with several general subjects. It proceeds with various infections in chapters 6 to 9. However, syphilis and other venereal diseases do not appear until chapters 39 and 40, where they are sandwiched between dermatologic diseases and geriatrics! Cardiovascular diseases are similarly presented with the blood diseases appearing in their midst.

The book is slanted at the general practitioner and will undoubtedly be useful to him as a general guide. For actual details of therapy, however, he will often have to consult other references.

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DIFFERENTIAL DIAGNOSIS OF COMMON DISEASES OF THE EYEGROUND. Paul Tower, M.D., Los Angeles. Grune & Stratton, New York, 1953. 243 pages, $10.00.

The book, which is intended for the student or specialist of ophthalmoscopy, is also advocated for the general practitioner, the internist, neurologist and other specialists. It is divided into eight parts, including the normal fundus; congenital anomalies; diseases of the retina; diseases of the choroid; diseases of the macula; glaucoma; diseases of the optic nerve, and myopia.

The text is well organized, concise, and covers the literature with emphasis on the more important articles. Each of the main divisions is subdivided into topics and at the end of each topic is a "literature discussion" which adds a good deal to the book.

The book is illustrated by approximately 130 black and white fundus photographs which the author says are superior to the color renditions available, stressing that diagnosis of fundus conditions should be primarily based on shape, size, and distribution of lesions rather than on color. However, on the whole the black and white illustrations are not too satisfactory. For example, in discussing physiological and glaucomatous cupping it would be very difficult for the student to see the difference in the figures 6 and 7. Another example: the color of the fundus in choroideremia that is so characteristic is entirely lost in the black and white reproduction. It seems too bad that color was not used or if this is prohibitive that good black and white line tracings were not made of the original photographs.

The book has an excellent index and the format is good with very readable printing on good grade paper. The book is to be recommended as a manual on ophthalmoscopy to be used in conjunction with some of the fundus atlases that are available.

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RORSCHACH INTERPRETATION: ADVANCED TECHNIQUE. Leslie Phillips, Ph.D., Director of Psychological Research, Worcester State Hospital; Associate Professor of Psychology, Clark University, Worcester; and Joseph G. Smith, Ph.D., Research Assistant, Commission on Human Resources and Advanced Training, Washington, D.C. Grune & Stratton, New York, 1953. 385 pages, $8.75.

As the title implies, this book is an advanced text on Rorschach's ink blot test, and presumes some familiarity with other work, including that of H. Rorschach himself. This is unfortunate for the general medical reader, because in many respects this book is richer in content and demonstrates current practice better than other test manuals. The author draws on extensive clinical experience, his own and that of others, in suggesting the interpretive significance of various kinds of responses to the ink blots. Experimental evidence is not cited (nor can it be—it doesn't exist) for many of the statements made. Used in the manner the author illustrates with case material, the Rorschach measures many aspects of personality, perhaps too many. However, this reviewer's impression is that more interpretations of the kind suggested here would be correct than incorrect, i.e., in agreement with facts about personality and psychiatric disorders obtained by other methods. A batting average of much more than .500 is excellent in a field where the basic variables are as resistant to definition as they are in psychiatry.

The book is intended for specialists and many psychiatrists will read it with interest and be impressed with its complexity. Its primary usefulness will be for persons already familiar with the method; their interpretations of Rorschach protocols will be enriched by careful study of the book.

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EPIDEMICS IN COLONIAL AMERICA. John Duffy. Louisiana State University Press, Baton Rouge, La., 1953. 274 pages, $4.50.

This is a detailed record of outbreaks of communicable disease from the founding of the North American colonies up to the time of the Revolution. "America" is used in the restricted sense, except for a few references to events in

Canada. Although the author is an academic historian who has no formal background in medicine, he appears to have succeeded fairly well in discriminating among the different disease entities which were involved. The information has been drawn from the newspapers, magazines and personal correspondence of the era, and is broadly inclusive. It appears that nothing of value has been overlooked.

The dust jacket advertises that Mr. Duffy has made an effort to determine the extent of disruption of social and economic life occasioned by each attack, but this phase of the work is disappointing. It can almost be summarized by saying that the colonies had a great deal of epidemic sickness, but that it was on the whole less than was occurring concurrently in Europe, and they prospered in spite of it. An item of current interest is the report that the colonists employed biological warfare against the Indian tribes in the form of smallpox spread by the distribution of infected blankets.

Mr. Duffy attempts some epidemiological interpretations which he would better have left to a more qualified student. Unfortunately, it appears that he is unfamiliar with the works of the most distinguished student of colonial epidemiology, C. E. A. Winslow.

For the scholar, this should be a valuable source-book; for the casual reader who is interested in colonial life, there are vivid descriptions of the impact of epidemics upon the colonial towns and the desperate measures which were taken to bring them under control. The printing and binding are excellent.

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MECHANISMS OF UROLOGIC DISEASE. David M. Davis, M.D., Professor of Urology Emeritus, Jefferson Medical College, Visiting Lecturer in Urology, Graduate School of Medicine, University of Pennsylvania. W. B. Saunders Company, Philadelphia, 1953. 156 pages, $4.50.

This little monograph by Dr. Davis is an excellent elementary outline of the fundamental processes involved in urologic disease. The author is well known in his field, not only as professor of urology at Jefferson Medical College, but also as collaborator with the late Hugh Young in the latter's monumental "Practice of Urology." The present volume is short and concise, almost too much so, and appears to be exactly what the author says it is—developed from a series of lectures to the students at Jefferson.

The book is addressed primarily to students and to physicians who have only a general interest in the field. It is an attempt to explain simply that urological diseases are not a group of unrelated conditions of the individual organs, but are due rather to underlying systemic changes which produce various interdependent manifestations. His classification is etiological rather than anatomical.

The specialist will find nothing new in this concept. He will, for example, agree fully that free drainage is essential, and that obstruction, plus secondary infection, produces our major problem and may involve any portion of the urinary tract. He may not go so far, however, as the author in denying the existence of chronic prostatitis as a clinical entity.

Dr. Davis lists eight important types of pathological change producing urinary disease. These are obstruction, infection, calculus formation, neoplasm, anomalies, trauma, foreign bodies, and neurogenic change. These are all discussed from the standpoint of the type of clinical disease produced. Naturally there is some overlapping because of the concurrent existence of more than one factor in many cases. The discussions are very brief, for the most part, and can hardly do more than suggest the connection between the primary change and the clinical manifestations. The physician will probably find it necessary to look elsewhere for more adequate information. In view of this fact one almost wonders why he saw fit to include an eight-page outline of the bacteria pathogenic in the urinary tract.

The last five chapters hardly seem related to the main subject of the book. They are on male infertility, diseases of the scrotum, diseases of the male external genitalia, catheterization, and an outline of history taking and physical examination. The author states that they were added "for entirely practical reasons," but does not explain further. Here too the discussion is hardly more than an index, and he includes psychic impotence with infertility, ordinarily an entirely different problem in the human male.

The fundamental thesis of this book is important to every doctor and it should be made available to students and non-specialists. They will find in it valuable information and a basis upon which to understand and interpret the variable findings and complications in diseases of the urinary tract.

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CLINICAL UNIPOLAR ELECTROCARDIOGRAPHY. Bernard S. Lipman, A.B., M.D., Instructor in Medicine, Emory University School of Medicine; and Edward Massie, A.B., M.D., F.A.C.P., Assistant Professor of Clinical Medicine, Washington University School of Medicine. The Year Book Publishers, Inc., 1953. 309 pages, $6.50.

As stated in the preface, this book is intended for the beginner in electrocardiography. It succeeds admirably in its purpose. However, some errors exist. For example, in the diagram on page 22, the polarity of the leads is incorrect. The electrocardiograms on pages 188 and 189 are interpreted incorrectly regarding the electrical position of the heart. In the discussion of the Master's two-step test, it is the reviewer's opinion that this procedure should not be performed if the control electrocardiogram is abnormal; by this simple precaution, many of the serious accidents associated with the exercise tolerance test can be prevented.

The chapters on hyperventilation, myocarditis, and congenital heart disease are too brief in content. The only practicality of these chapters would be to draw the attention of the readers to the subjects.

In summary, this text is ideally suited and recommended for the beginner in electrocardiography.

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ROENTGEN DIAGNOSIS OF THE HEART AND GREAT VESSELS. Erich Zdansky, M.D., Professor of Roentgenology, University of Vienna and Director of the Central Roentgen Institute of the Allgemeinen Krankenhaus. Translated by Linn J. Boyd, M.D., F.A.C.P., Professor and Director of Medicine, the New York Medical College. First American Edition. Grune and Stratton, New York, 1953. 500 pages. $15.50.

The translator has succeeded in rendering a very readable English version of Zdansky's authoritative book, and extensive additions have been made to the fourth German edition, particularly with regard to the section on congenital heart disease. The topographic roentgen anatomy of the heart in all standard projections and the various methods and limitations of cardiac mensuration are exhaustively treated, with very careful consideration of the effects of diaphragmatic position, respiratory motion, degree of cardiac filling, and other sources of error in interpretation of cardiac size. There is, however, a regrettable and thoroughly outmoded emphasis on fluoroscopy and orthodiagraphic registration and the reviewer was appalled at the statement that "only in a few patients and for special diagnostic reasons are films required." Commendable features are the inclusion of clinical and electrocardiographic correlative material, and the concise discussions of the abnormal circulatory dynamics underlying anatomical and roentgeno-

logical changes which develop in the heart under various pathological conditions.

It is unfortunate that the photographic reproductions of roentgenograms are reversals. While the cardiac silhouette itself is reasonably well demonstrated in these reproductions, intracardiac calcifications and details of pulmonary circulatory disturbances are largely invisible. There are many excellent schematized line drawings, however, which partially make up for the deficiency in roentgenographic reproductions. The description of pulmonary vascular changes in cor pulmonale, in long-standing intracardiac and extracardiac congenital shunts, and in pulmonic stenosis is somewhat incomplete and inadequately illustrated. The new section on congenital heart disease is generally excellent, but the classification of various entities is based upon embryological grounds and is therefore rather inconvenient for the clinician. The reviewer cannot agree with the statement that "the roentgen findings of transposition of the great vessels show an astonishing variability." In fact, there is a rather surprising uniformity of the roentgen features in complete transposition of the great vessels as seen in infants and young children; variability is introduced in adults largely because of the selection features inherent in survival to adult life with this serious disease.

These are rather minor deficiencies, however, and in general this is an excellent book which can be used as a reference source by the radiologist, cardiologist and the pediatrician alike. Not the least useful of its features is the very extensive bibliography which is understandably weighted with European literature and tends to neglect significant English and American contributions. Since the European literature is somewhat less accessible to the average American physician, this is perhaps not a defect but a virtue.

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ESSENTIAL UROLOGY—2nd Edition. Fletcher H. Colby, M.D., Chief of Urological Service, Massachusetts General Hospital; Associate Clinical Professor of Genito-Urinary Surgery, Harvard Medical School. The Williams and Wilkins Company, Baltimore, 1953. 650 pages, $8.00.

This is an enlarged and revised edition of Dr. Colby's book which appeared originally in 1950, and the first edition of which has already had three printings. The book is directed especially to students, interns and general practitioners, and does not pretend to be a complete urological textbook. However, for a volume of its size it is most comprehensive and includes discussions not only of the common urological diseases but of most of the unusual conditions as well. In this respect at least it will be found superior to many of the larger current textbooks on urology.

The changes in the second edition are largely those essential to keep it abreast of the modern advances in the field. There has also been some rearrangement of material and the new edition is slightly larger than the previous one. There is a little more consideration of treatment in this edition, but the book is still somewhat limited in this respect and the clinician will not be able to find in it adequate information on therapy. However, this seems a somewhat minor deficiency in a work which is in other respects so admirable. The author is chief of the urological service at the Massachusetts General Hospital, and the work reflects the basic principles and practices of the institution.

The book is organized in three sections. The first of these is on the anatomy and physiology of the genito-urinary organs, the second a short section on methods of examination, and the third, which makes up the greater part of the book, is on the diseases of the genito-urinary organs. These are considered on an anatomical basis, the diseases of the various organs being considered as clinical entities. This is the generally accepted method, though it is recognized that not infrequently there is an interdependence of pathology of the various parts of the urinary tract.

It is difficult to select the strongest portions of the book. It is well organized and extremely well written, and the numerous illustrations are all excellent. The section on urinary calculi is very good and of course follows the teachings not only of the author but of his equally well-known colleagues at the Massachusetts General Hospital. The sections on neoplasms of the various organs are also good, and the chapter on tuberculosis is clear, concise, and accurate.

Altogether this is a book that can be recommended to everyone interested in urology from the student to the specialist, all of whom will find in it much of interest and importance. It will be invaluable to those interested in teaching for its essential information is so easily abstracted. "Essential Urology" is the best small book on the subject that has appeared in recent years.

* * *

HEREDITY IN HEALTH AND MENTAL DISORDER—Principles of Psychiatric Genetics in the Light of Comparative Twin Studies. Franz J. Kallmann, M.D., Principal Research Scientist (Medical Genetics), New York State Psychiatric Institute; Assistant Professor of Psychiatry, College of Physicians and Surgeons, Columbia University. W. W. Norton and Company, Inc., New York, 1953. 315 pages, $6.00.

This excellent book of about 300 pages contains the Thomas William Salmon Memorial Lectures given at the New York Academy of Medicine. The material deals with the highly controversial subject of heredity as it applies to mental health and mental disease.

Part I of the book is entitled "Heredity in Relation to Mental Health." It gives a brief history of genetics and an excellent summary of the principles of genetics and the methods of genetic investigation.

Part II deals with heredity in relation to mental disorder. The author quotes extensively from other works and presents his own material which is the result of many years of careful study. He considers that there is good basis for accepting heredity as an important factor in the psychoneuroses and in the so-called functional psychoses; namely, manic depressive psychosis, schizophrenia and involutional psychoses. He feels that manic depressive psychoses show the greatest hereditary factor, and in his series of single ovum twins, where one twin is a patient in a state hospital, he finds one hundred per cent correlation in the diagnosis of manic depressive psychosis. The various types of mental deficiency are discussed and an evaluation is made of the varying roles that heredity plays in these various groups. Other neurological conditions, including the convulsive disorders, are also discussed.

Part III deals with contributions of genetics to mental health planning. This is an excellent summary of present knowledge along these lines and suggestions as to what may be done.

This book can be highly recommended to anyone interested in the relation of heredity to mental disease and mental defect.

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STRESS INCONTINENCE IN THE FEMALE. John C. Ullery, M.D., F.A.C.S., F.I.C.S., Assistant Professor in Obstetrics and Gynecology, Jefferson Medical College. Associate in Gynecology and Obstetrics, Graduate School, University of Pennsylvania. Grune and Stratton, New York, 1953. 149 pages, $6.75.

Ullery's book, "Stress Incontinence in the Female" brings this subject up to date. The book is easy to handle, is printed on good paper with clear-cut drawings. A complete discussion of the embryology and anatomy of the female urethra and its associated structures is given; the author believes

this exhaustive review (43 pages) is desirable in order to give a better understanding of the etiologic facts in the causes of stress incontinence. There are also chapters on the physiology of urination and incontinence and on the diagnosis of stress incontinence. The non-operative and the operative treatment are amply covered; the operative procedures being well illustrated and described. In the final chapter Ullery discusses the results of a series of 39 surgically treated cases. The book answers the purpose for which it is offered, a reference work on a highly specialized subject.

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SURGERY OF THE PANCREAS. Richard B. Cattell, M.D., the Lahey Clinic; and Kenneth W. Warren, M.D., the Lahey Clinic, Boston, W. B. Saunders Company, Philadelphia, 1953. 374 pages, with 100 figures, $10.00.

This book is based on the experiences of the authors while working at the Lahey Clinic in Boston with over 1,000 patients with surgical diseases of the pancreas. The specific problems presented by these patients are reviewed carefully and analyzed in terms of the personal experience of these authors, utilizing various methods of treatment.

Emphasis is placed upon diagnostic methods, surgical treatment and the results of such treatment. Frequent reference has been made to the surgical literature with valuable editorial comment upon the opinions of others.

Included in this comprehensive review of the subject of surgery of the pancreas is an excellent review of the anatomy and physiology of the pancreas.

This book should be of inestimable value to all surgeons and internists who are interested in the problems of pancreatic disease and pancreatic surgery.

* * *

THE RADIOLOGY OF BONES AND JOINTS — An Introduction to the Study of Tumors and Other Diseases of Bone—5th Edition. James F. Brailsford, M.D., Ph.D., F.R.C.P., F.I.C.S. (Hon.), Hunterian Professor, Royal College of Surgeons, 1934-35, 1943-44; Founder and First President of the British Association of Radiologists. The Williams and Wilkins Company, Baltimore, 1953. 875 pages, over 725 illustrations, $19.00.

The radiological examination of the skeleton constitutes an important part of everyday clinical practice. This well-known reference book appears in the same general format as previous editions. It is divided into two main parts: regional radiography and abnormalities of bones and joints.

The skeleton at birth, the appearance of various portions of the extremities, the pelvis, spine, thorax, skull and teeth are covered. Then appear a discussion on developmental abnormalities and dystrophies, a chapter on generalized diseases of the skeleton, on granulomas of bone and finally, on bone tumors.

The book has been expanded by additional data and illustrations. Some of the latter are larger than in the earlier editions. Nearly all of the commoner deformities and diseases are covered, some fully and some briefly. The author still does not believe that biopsy is reliable or important in establishing the diagnosis of certain bone tumors, notably osteogenic sarcoma. His arguments are marshaled in brisk and clear form.

The treatment of some subjects, such as spondylolysis and spondylolisthesis, is lengthy but confused. Some of the newer entities covered in this edition are Camurati-Englemann's dystrophy (known in this country as Englemann's disease), vitamin A and D poisoning, scaphocalcaneal bar and so-called adult scaphoiditis. The work represents the opinions of a well-known senior British radiologist. It can be recommended to orthopedists and radiologists, but not as a textbook.

ENDOCRINOLOGY IN CLINICAL PRACTICE. Gilbert S. Gordan, M.D., Ph.D., Assistant Professor of Medicine, University of California School of Medicine; and H. Lisser, M.D., Clinical Professor of Medicine and Endocrinology, University of California School of Medicine, The Year Book Publishers, Inc., Chicago, 1953. 407 pages, $10.50.

Endocrinology in Clinical Practice is a condensed text covering the field of endocrinology in 400 pages. It is the product of a San Francisco group of physicians, all of whom are members of the faculty of the University of California School of Medicine. They are headed in this effort by Professor Hans Lisser, who has been a leader in the study of endocrinology for many years.

The book is of immediate usefulness to the general practitioner. It covers the problems of diagnosis and treatment of the diseases of the thyroid gland, parathyroid glands, adrenals, pituitary glands, metabolic bone disease, and has a valuable section on diabetes. The problems of obesity and leanness are also considered. The section on the diseases of the gonads is followed by one on the problems of infertility. The work concludes with a chapter on endocrine therapy and neoplastic diseases. An appendix lists endocrine preparations with their trade names and indicated dosages.

It may be seen therefore, that the whole field of endocrinology is covered in this small volume. The reviewer is impressed with the extent and the adequacy with which the very large amount of material is covered.

* * *

MEDICAL SCHOOLS IN THE UNITED STATES AT MID-CENTURY. John E. Deitrick, M.D., and Robert C. Berson, M.D., McGraw-Hill Book Company, Inc., New York, 1953. 380 pages, $4.50.

Medical education is intimately integrated with scientific, social, economic, and political factors which affect the life of a nation or of an individual. Because advances in these various fields have a direct influence upon the practice of medicine, those who are responsible have an obligation to keep themselves informed and thereby to keep medical education on a high level of performance.

A number of surveys covering different aspects of medical education have been made during the first half of this twentieth century. A report of one such survey, which is a recognized classic in its field, was published in 1910. It was directed by Abraham Flexner under the sponsorship of the Carnegie Foundation for the Advancement of Teaching and in cooperation with the Council on Medical Education of the American Medical Association, and was influential in causing significant advancements to be made in medical education and thereby in medical practice.

Under the direction of the Council on Medical Education of the American Medical Association and the Association of American Medical Colleges and with the additional assistance of the W. K. Kellogg Foundation, the survey of which this book is a report, was made. Although differing in many respects from the Flexner Report, it gives an accurate picture of medical education in the United States today.

In considerable detail, data covering all of the important functions of a medical school are presented and analyzed. In the analysis of current findings, the authors project certain concepts in the nature of recommendations for continuing future application. These are not arbitrary but are supported by well documented evidence contained within the body of each respective chapter.

The book is unique. It is exceptionally well written and will be a continuing authoritative reference for all who have any interest in medical education and its relationship to the welfare of this nation.

HUMAN NEUROANATOMY — 3rd Edition. Oliver S. Strong, Late Professor of Neurology and Neurohistology, College of Physicians and Surgeons, Columbia University; and Adolph Elwyn, Associate Professor of Neuroanatomy, College of Physicians and Surgeons, Columbia University, The Williams and Wilkins Company, Baltimore, 1953. 481 pages, $7.50.

This textbook has been kept well abreast of the times by the publication of three editions since it was first introduced in 1943. There has, however, been sufficient progress in the field of neuroanatomy to justify the frequent revisions. Increased interest, based on physiological and clinical research, in the thalamic nuclei and the reticular activating system, is responsible for much work on these structures, and the present edition presents the results of this research. The text is clear, and the illustrations and diagrams are well chosen and nicely reproduced. The diagrams are particularly to be commended to the student for their clarity and lack of complicating detail. Consideration is given to function as well as structure, so that a good deal of physiology finds its way into the text, adding to its interest. This book can be recommended both to the medical student and the practitioner who wants a reference work containing more anatomical detail than is found in the usual textbook of clinical neurology.

* * *

PULMONARY TUBERCULOSIS—A Handbook for Students and Practitioners—3rd Ed. R. Y. Keers, M.D., F.R.C.P.(Edin.), F.R.F.P.S.(Glas.), F.R.S.E., Medical Director, Red Cross Sanatoria of Scotland; and B. G. Rigden, M.R.C.S.(Eng.), L.R.C.P.(Lond.), Physician, Lewes Chest Clinic. E. & S. Livingstone, Ltd., Edinburgh. Distributed by Williams and Wilkins Co., 1953. 324 pages, $5.50.

Concepts of pulmonary tuberculosis have undergone revolutionary revision during the past few years, and there is no volume available at this time which covers the problem adequately. The present edition of this work is surely among the best, and, although it is of British origin, the ideas expressed are usually similar to those currently held in America. A majority of physicians in America would not agree that phrenic nerve interruption should usually accompany pneumoperitoneum. Specific drug therapy is described briefly, but the long term treatment (in excess of one year) currently popular, is not discussed.

Many important topics are dealt with very briefly, for this is a small book, but unfortunately the reader is not referred to original sources of more complete information, for there is no bibliography.

If every physician should read this book from cover to cover, he would gain a clear concept of this most important infectious disease far superior to that of his average colleague. It can easily be read in a few evenings, and the task is a pleasant one for the literary style is very clear, direct and completely understandable at first reading.

* * *

TEXTBOOK OF PUBLIC HEALTH (Formerly Hope and Stallybrass)—13th Ed. W. M. Frazer, O.B.E., M.D., Ch.B., M.Sc., D.P.H., Barrister-at-Law, Gray's Inn; Medical Officer of Health, City and Port of Liverpool, Professor of Public Health, University of Liverpool, The Williams and Wilkins Company, Baltimore, 1953. 663 pages, $8.50.

This brief but comprehensive Textbook of Public Health is especially interesting in its 13th edition because of its inclusion of the changes in public health program and practice in Great Britain brought about by the adoption of the National Health Service Act of 1946 (which was put into effect in 1948). The author is professor of public health at the University of London and health officer of the City of Liverpool, a man well equipped to discuss both principles of preventive medicine and practice of public health.

The book reveals that both the practice of and attitude towards many specific public health procedures is markedly different in the United States and Great Britain. For example, British public health students are still instructed in disinfection of rooms by gas and liquid with specific reference to formalin—which Americans abandoned long ago in favor of soapy water, scrubbing and sunshine. There is an interesting contrast between the theoretically advanced nationalized medical and health programs of the National Health Service Act and the termination of all compulsory vaccination by the repeal of vaccination laws in that act. This contrast is further illustrated by the picture of tuberculosis. Forty percent of the cows in England and Wales are infected with tuberculosis; 3 per cent of these are known to be capable of infecting milk. It is estimated that 2,000 human deaths occur annually from non-pulmonary tuberculosis contracted from raw milk, as well as about 4,000 fresh cases each year.

This volume is valuable to anyone who wishes to get a summary view of the developing scene of public health (and to a certain extent of medicine generally in the British Isles). It should also prove a sound textbook for the British student even though he will have to plow through much official statement.

* * *

TEXTBOOK OF GYNECOLOGY—2nd Edition. John I. Brewer, B.S., M.D., Ph.D., Professor of Obstetrics and Gynecology, Northwestern University Medical School, The Williams and Wilkins Company, Baltimore, 1953. 532 pages, $10.00.

This volume is an expanded second edition of an undergraduate text first published in 1950 by Thomas Nelson & Sons and at that time distastefully subtitled "The Teachings of John I. Brewer." The author believes that gynecology should be taught almost wholly from the standpoint of symptoms, and in his first edition he attempted to present the entire subject in that fashion. In this new edition, however, he has been persuaded to devote the first half of the book to orthodox, concise descriptions of the more common gynecologic disorders. For the most part this material is well presented and the portions of the text dealing with pathology are particularly good, owing to the author's interest in this phase of gynecology. Part II is a somewhat condensed version of the original book and utilizes the same wordy chapter headings, beneath each of which one finds a lengthy list of the diagnostic possibilities to be considered when confronted by the symptoms noted at the top of the page. Obviously a good deal of repetition is necessary in order to cover the ground in two lengthy chapters which are entitled, respectively, "Abnormal Uterine Bleeding with Tumor and Without Tumor" and "Abnormal Uterine Bleeding and Pain with Tumor and Without Tumor." But the author believes that repetition is good pedagogy and justifies the pattern of his presentation on this basis. Some of the other chapters are not so complex and cover such standard items as dysmenorrhea, amenorrhea, sterility, leukorrhea, and the climacteric. To complete the list, there are a few other chapters in which well known lesions are hiding under such confusing titles as, for example, "Bearing-down Discomfort; Mass Protruding from the Vagina." In brief, all the important things are here, but it takes a bit of sleuthing to find them.

This edition contains more than twice as many illustrations as the original volume, but somewhat less than a hundred additional pages. While most of the photographs of microscopic preparations and gross surgical specimens are very good, some of the views of operative fields are marred by the inclusion of too many extraneous items. It would appear, too, that some of the photographs have suffered in quality while being converted from colored transparencies to black and white prints.



Abnormal Motility as the Cause of Ulcer Pain

Until recently the general opinion was held that ulcer pain was primarily caused by the presence of hydrochloric acid on the surface of the ulcer.

Present investigations[1,2] on the relationship of acidity and muscular activity to ulcer pain have led to the following concept of its etiologic factor:

> "... abnormal motility[2] is the fundamental mechanism through which ulcer pain is produced. For the production and perception of ulcer pain there must be, one, a stimulus, HCl or others less well understood; two, an intact motor nerve supply to the stomach and duodenum; three, altered gastro-duodenal motility; and four, an intact sensory pathway to the cerebral cortex."

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1. Schwartz, I. R.; Lehman, E.; Ostrove, R., and Seibel, J. M.: A Clinical Evaluation of a New Anticholinergic Drug, Pro-Banthine, to be published.

2. Ruffin, J. M.; Baylin, G. J.; Legerton, C. W., Jr., and Texter, E. C., Jr.: Mechanism of Pain in Peptic Ulcer, Gastroenterology *23*:252 (Feb.) 1953.

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1. Reich, C., and Mulinos, M. G., Treatment of Refractory Nutritional Anemia with Gelatine. Bull. N.Y. Med. Coll. March 1953.

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Prognosis of Breast Cancer Poorer In Women Under 40

Women under 40 years of age with cancer of the breast have a comparatively poorer prognosis than those over 40, in the opinion of Drs. Edward F. Lewison, Frances H. Trimble and Paul C. Griffith, Baltimore.

They reached this conclusion after a 10-year follow-up study of 220 women, ranging in age from 27 to 90 years, who were surgically treated for cancer of the breast at Johns Hopkins Hospital between 1935 and 1940. Two hundred and four patients (93 per cent) were treated by means of complete removal of the breast and lymph nodes in armpit, 14 patients (6 per cent) by removal of the breast only, and two patients (1 per cent) received only local excision.

The five-year survival rate for women under the age of 40, regardless of the type of treatment or the stage of disease, was only 29.6 per cent (eight out of 27 patients). This was in contrast to the five-year survival rate for all patients of 43.2 per cent, the doctors wrote in a recent issue of the *Journal of the American Medical Association*.

Of the variable factors of importance in the ultimate survival of the patient with breast cancer, "the presence or absence of axillary involvement appears to be of paramount and decisive influence in determining the prognosis of patients," the doctors stated, adding:

"Axillary metastases were noted in 136 of the patients (61.8 per cent) who were subjected to radical mastectomy. When surgical treatment consisted of radical mastectomy, almost two-thirds of the patients without axillary metastases were alive five years following operation, whereas only one-third of the patients with axillary metastases were alive at the end of this period."

It should be noted, the doctors said, that in the group of women under the age of 40, the breast and axilla were involved more often—in 70.4 per cent of the patients—than in those women over 40. This indicates a more advanced disease at the time of operation, they added.

The five-year survival rate for patients without detected axillary metastases was 64 per cent, while the rate for patients with detected axillary metastases was only 31 per cent, according to the doctors.

Sixty-four patients were alive at the end of 10 years, an over-all rate of 29.1 per cent, the doctors pointed out. However, if the cancer remained confined to the breast alone, the 10-year survival rate was 47.6 per cent. On the other hand, if breast cancer had already spread to the adjacent axilla, the 10-year rate then fell to 17.6 per cent.

The doctors compared today's improved operative techniques for cancer of the breast with those of a

(Continued on Page 61)

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New Drug Believed Effective in Treating Toxemia of Pregnancy

(Continued from Front Advertising Section, Page 54)

toxemia of pregnancy. In all cases, prompt relief was obtained following use of the drug.

The primary disturbance responsible for toxemia of pregnancy remains unknown, Dr. Meilman pointed out. In many instances, toxemia develops so early in pregnancy that the chances of fetal survival with immediate delivery are small; if the fetus remains undelivered, intrauterine death often occurs. By the judicious use of protoveratrine such patients, in some instances, may be carried for several weeks, until reasonable maturity of the fetus is reached, before instituting necessary obstetric measures, thus improving the chances of fetal survival, he added.

According to Dr. Meilman, the number of cases he described is too few for final determination of the value of the drug, but he said he believed the preliminary tests indicated its effectiveness.

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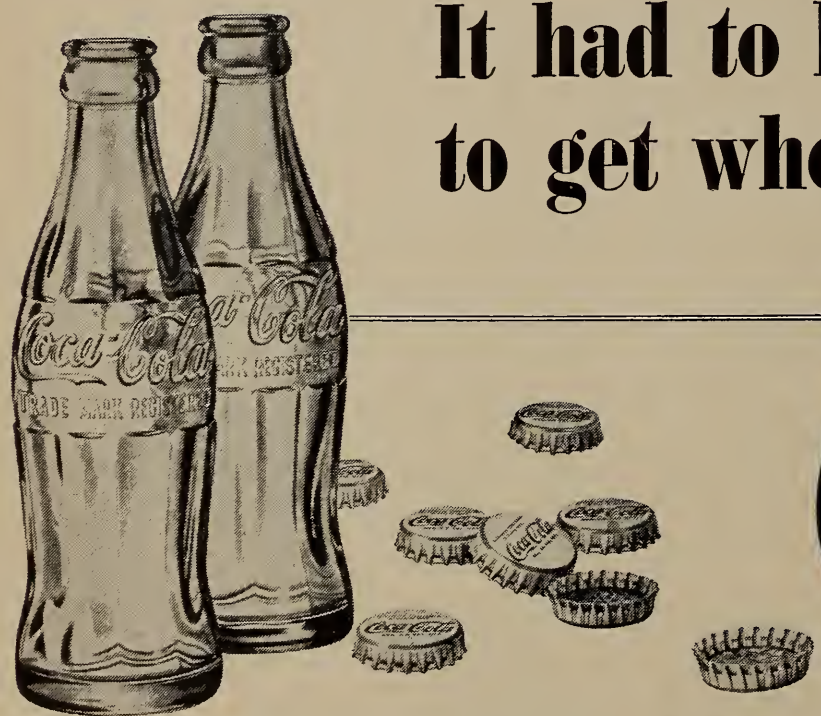
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Prognosis of Breast Cancer Poorer In Women Under 40

(Continued from Page 58)

half-century ago. They pointed out that in 1907, when Dr. W. S. Halsted, who developed the radical mastectomy operation, made a survey of 232 patients treated by such radical surgery, the five-year survival rate was 28.9 per cent, almost 15 per cent lower than that of today.

The doctors are associated with the breast clinic, division of the tumor clinic, department of surgery and the department of pathology, Johns Hopkins Hospital and University.

Medical Frankenstein of the Future

The future of social security plans the world over is of prime concern to American physicians because the schemes are constantly being expanded to include all kinds of medical care provisions.

At its recent meeting in The Hague, the World Medical Association, representing doctors from 46 nations, took the initiative in opposing medical care under government-controlled social security schemes. The association contended that physicians should not be forced to work on a full time salaried medical service under a government plan because it would leave the doctor no incentive.

(Continued on Page 66)

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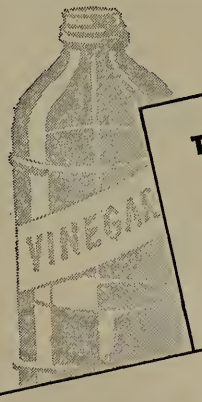
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*Pollack, H., and Halpern, S. L., in collaboration with the Committee on Therapeutic Nutrition, Food and Nutrition Board: Therapeutic Nutrition, Publication 234, National Academy of Sciences —National Research Council, 1952.

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Medical Frankenstein of the Future

(Continued from Page 61)

Applauding the World Medical Association's position, one newspaper said, editorially, that "the only incentive in socialism is to socialists," and then added: "If an industry is nationalized, it and its workers and managers are put at the service of the socialists in government. If medicine is socialized, the benefit to the doctors and the patients will be less. But the benefit to the bureaucrat is tremendous.

"If there then should be something less than enthusiasm among the younger generation for entering the medical profession, the bureaucrat will rectify that by subsidizing the medical education of aspirants with the right political references. And that gives him a hold on something else—education. Once started, the thing snowballs, and if no one else is particularly happy, the omniscient planner is sure to be."

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1. Rottino, A.; Boller, R., and Pratt, G. H.: Angiology *1*:194, 1950.

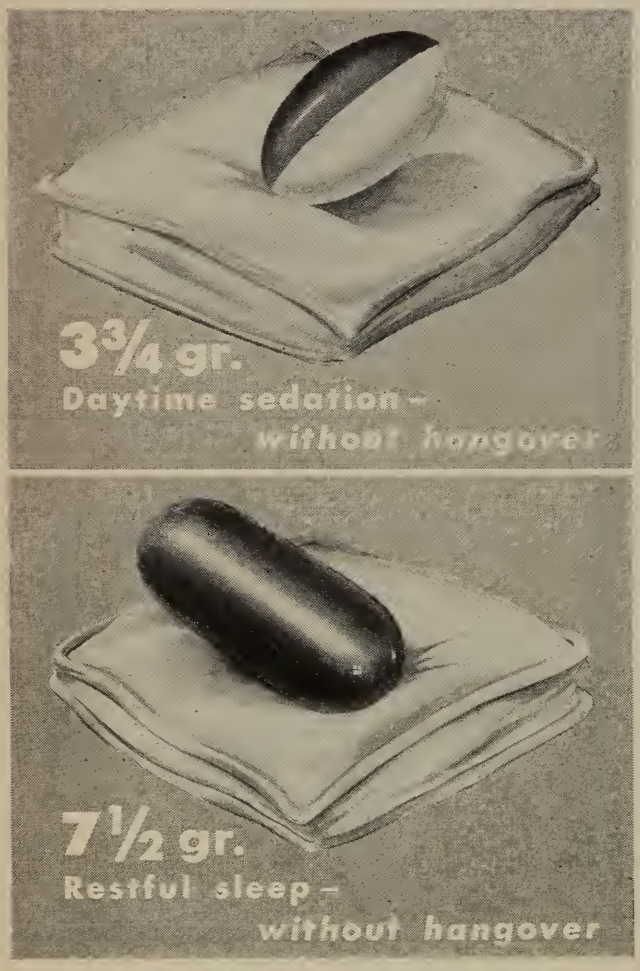
2. Boller, R.; Rottino, A., and Pratt, G. H.: Angiology *3*:260, 1952.

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Housewives Most Prone to Skin Diseases Of Hands

Being "just a housewife" can be a dangerous occupation—one of the most dangerous, in fact, as far as skin disturbances of the hands are concerned.

Dermatitis of the hands gives rise to an immense amount of suffering and constitutes about nine per cent of the daily medical endeavor of a practicing dermatologist, it was stated by Dr. Richard L. Sutton, Jr., Kansas City, Mo., and Dr. Samuel Ayres, Jr., Los Angeles.

"The usual patient is a young matron, who must keep house, cook, wash dishes, do the laundry, raise her children, and hold her husband; who can ill afford to sustain the misery of manual disability and whose occupation is inherently one of the most hazardous with which the dermatologist commonly has to deal," the doctors wrote in a recent issue of *Archives of Dermatology and Syphilology*, published by the American Medical Association.

Causes of inflammatory skin conditions of the hands are numerous, and to effect a cure it may be necessary to eliminate more than one condition, according to the doctors, who added:

"The skin as a whole is the dividing line between the person and his environment. It combines the features of a barrier, an adaptive mechanism, and a sensory organ—a great deal is asked of it, so to speak.

"The skin of the hands is exposed to the potentiality of diseases provoked by heat, cold, light, moisture, irritant chemicals, sensitizing chemicals, and pathogenic organisms to a degree over and above other skin. It is subject additionally to all the diseases of internal origin that skin is elsewhere, and the hands are especially subject, being special tactile organs, to psychosomatic disturbances."

There are many mechanisms provoking inflammatory skin disease of the hands, the doctors pointed out:

1. Injury of all kinds, including friction, heat, cold, moisture, soaking, radiation and scratching.

2. Contactant injury by such primary irritants as soap, detergents, polishes and cleansers.

3. Contactant injury by such sensitizers as nickel, rubber or plastic handles, rubber hose, and kitchen-knife handles which provoke itching, redness and the formation of blisters when the skin is even lightly touched.

4. Allergic reactions to ingested, inhaled or injected foods or chemicals.

5. Locally invasive parasites including viruses, bacteria and fungi, as well as animal parasites.

6. An infection in another part of the body.

7. Nervous, mental or psychiatric abnormalities, including anxiety, scratching and self-mutilation.

(Continued on Page 76)

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Housewives Most Prone to Skin Diseases Of Hands

(Continued from Page 70)

8. Cutaneous changes due to nutritional deficiencies, metabolic defects and hormonal imbalances.

9. "Lowered resistance" of the individual, rendering the skin susceptible to inflammation or infection.

10. Combinations of these mechanisms.

"Dermatitis of the hands is not often due entirely to one mechanism," the doctors stated. "It is seldom a simple thing etiologically, and, in the study of any case, the person as a whole and his environment as a physiochemical and sociobiologic complex may have to be taken into account. It is the physician's job to create the optimum circumstances which favor healing, and that is all he can do."

Necessary factors to be taken into consideration to effect a cure of skin disturbances of the hands were outlined by the doctors:

1. No physical agencies or excessive nervous mobility or scratching should interfere with healing. The patient must have rest, relaxation and quiet. Use of stimulants such as coffee, tea and the cola drinks should be severely restricted.

2. No chemical likely to irritate the skin should touch the hands. Only water, cotton, linen and carefully selected, rarely irritating medicines should be used.

3. Coccic parasites should be eliminated by means of non-irritating drugs.

4. Infections in other parts of the body should be eliminated through use of antibiotics.

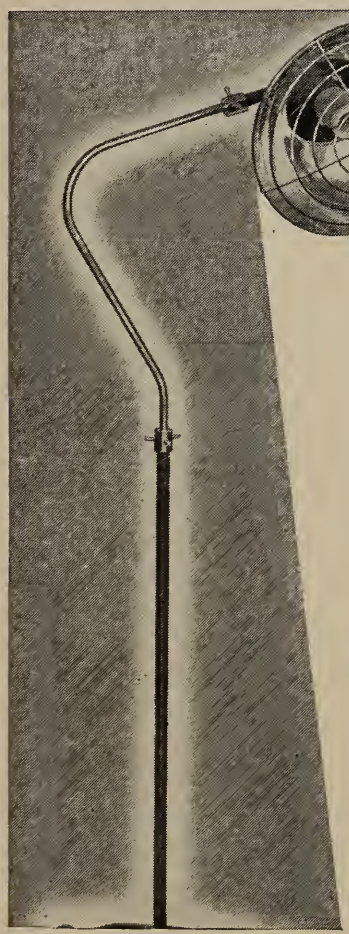
5. Optimum capacity to heal should be promoted in the patient himself by adequate vitamin and protein nutrition.

6. Possibility of food allergy investigated.

7. X-ray therapy used only when absolutely needed.

Dr. Sutton is professor and chairman of the department of dermatology and syphilology, University of Kansas Medical Center, Kansas City, Kan. Dr. Ayres is emeritus professor of dermatology and syphilology, College of Medical Evangelists, Loma Linda, Calif., and Los Angeles.

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United States Chamber Charts Growth of Commercial Health Insurance

A United States Chamber of Commerce survey of commercial insurance companies and insurance societies shows these organizations are making steady progress in selling individual hospital, medical, and surgical insurance policies. Not included in the survey are Blue Cross, Blue Shield, mutual benefit associations, salary-continuance plans, union benefit plans, and other methods of voluntary group coverage. Thus the findings do not show the total extent of coverage. The study covered 1952, and is based on information or estimates from 233 firms or societies issuing individual policies. By type of insurance, the survey showed:

Medical Expense (excluding surgery): The highest percentage increase, 21 per cent, from 4.2 millions covered in 1951 to 5.1 millions in 1952. Surgical Insurance: The largest numerical increase, with 2.8 millions more covered, from 16.4 millions to 19.2 millions, a percentage increase of 17 per cent. Hospitalization: Most popular of all, it increased 10.1 per cent, from a coverage of 21.6 millions in 1951 to 22.3 millions in 1952, or a numerical increase of 700,000. Disability Insurance (payments to workers kept from the job by sickness or accident): Only a slight increase, from 12.5 millions covered to 12.6 millions.

This was the first time the Chamber surveyed the new catastrophic insurance so it was not possible to establish a rate of growth. At the end of 1952 more than 156,000 persons were covered by catastrophic insurance, which complements the usual hospitalization, surgical and medical policies by paying 70 or 80 per cent of the additional cost up to a usual maximum of $10,000.

The report was printed in American Economic Security, Vol. 10, No. 5. Reprints are available at no cost at the United States Chamber of Commerce, Washington, D. C.

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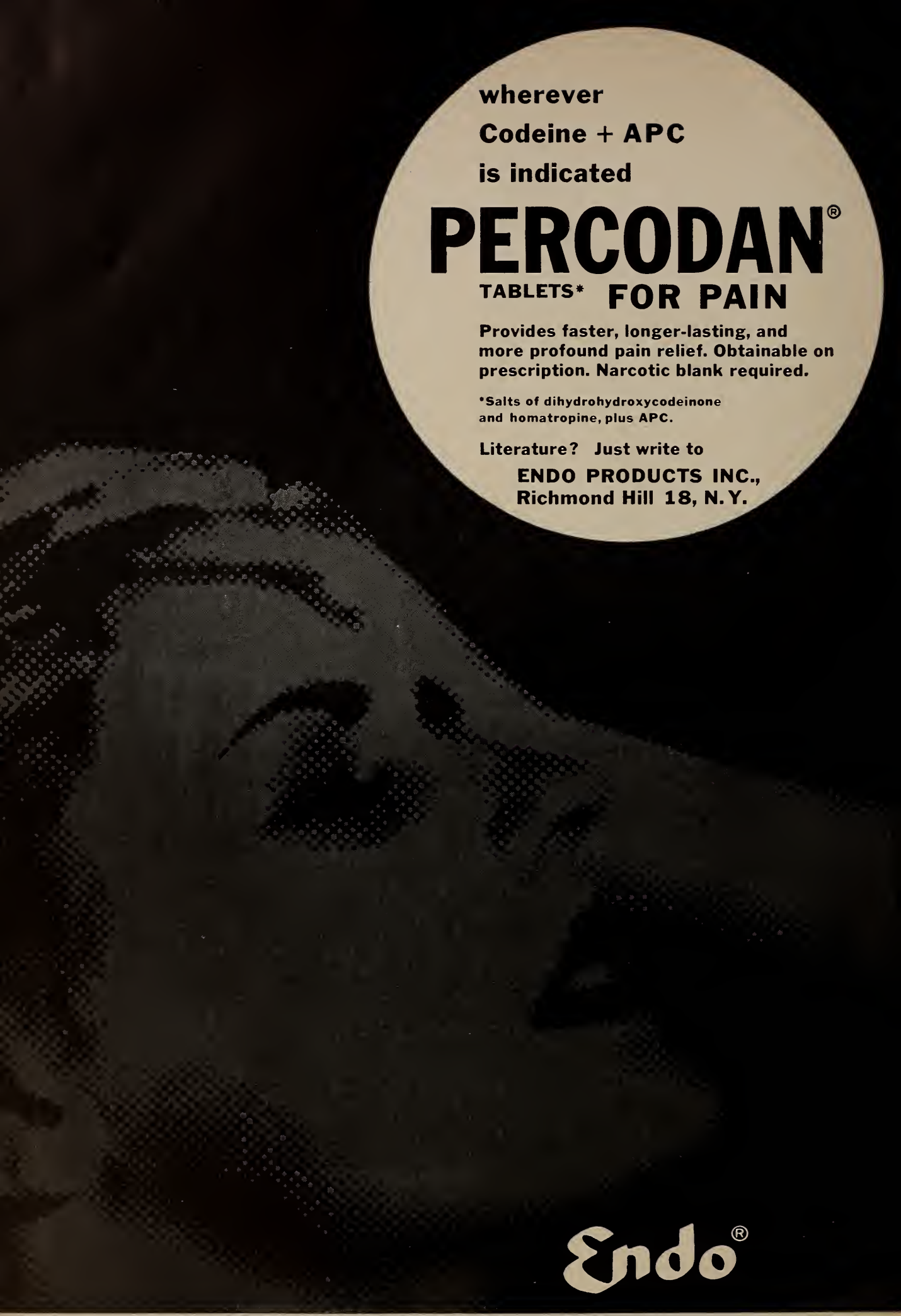
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Handicapped Seek Chance to Prove Themselves

A chance to prove themselves—a chance to prove they don't need anyone to feel sorry for them—is what most of the handicapped want.

However, the well-meaning person often robs the handicapped of this chance, Dr. John E. Eichenlaub, Urbana, Ill., wrote in a recent issue of *Today's Health* magazine, published by the American Medical Association.

"A person with a defect, whether it is mild or severe, is still a person," Dr. Eichenlaub pointed out. "Like anyone else, he has to feel accepted and wanted as a person before the friendship or the applause of his fellows means anything to him. To think of him first as a horrible case, second as an object for charity (whether in money, deed or words) and last or not at all as a person closes the roads of real human contact.

"More than anyone else, a person who is handicapped needs to find these roads open. Friendship and applause themselves do not have greater meaning for him than for other people, but proof of his ability to win these treasured rewards certainly does. His constant fear is that he will not be able to live a fruitful and satisfying life.

"He can get used to the idea of not being as productive, as comfortable or even as independent as his fellows, but he can never get used to the idea of being a cripple instead of a person—of being closed off from his fellow man by an impenetrable wall of differentness. He needs to show himself continually that he is an accepted member of the human race, free to seek and find the rewards of life as if he were healthy and normal.

"The person who is fighting a handicap hates to have anybody talk about his problem. He hates to have things done for him if he can do them himself. He hates to get any help or reward which he does not think he has earned. He hates these things because he hates to be thought of as a cripple instead of as a person. But, he also hates them because he knows it would be easy to fall into the same way of thinking himself.

"He knows that if he quits trying to get the normal satisfaction for which he must struggle so much harder than other people, he will lose out in the long run; but the fruits he can win through sympathy, poor as they are, tempt him sorely. This is the reason for the violent outbursts with which a handicapped person sometimes greets well-meaning helpers."

Doctors today think that weaning the handicapped from self-pity and invalidism is an important part of the job, according to Dr. Eichenlaub. They aim to make people build their lives on hope and achievement instead of on despair and self-pity. However, he added:

"No matter how much effort is put into it, not every patient can be kept from invalidism. Some find in illness the excuse that they have always sought for backing off from the problems of living. Others find that their basic need to lean on others is finally met. Still others find that the sympathetic response of relatives and friends to their every wish brings them closer to their desires in life than anything they have been able to do in health.

"These things encourage invalidism. And once invalidism is established in the patient's personality, it is very hard to root out again. In fact, this process usually takes long and intense effort by a trained team of specialists."

Calf Girth Measurement a Valuable Diagnostic Aid

A difference in the size of the calves of the legs may be the forewarning of a dangerous blood clot in the lung artery or of an obscure malignant condition. Therefore, calf girth measurements are a valuable diagnostic aid and should be a routine part of a physical examination, in the opinion of Dr. Albert Damon, New York, and Ross A. McFarland, Ph.D., Boston.

In a recent issue of the *Journal of the American Medical Association* they reported a study of 369 healthy professional bus and truck drivers, 104 healthy women, and 109 patients with acute thrombophlebitis of the leg veins. Thrombophlebitis is a condition in which inflammation of the vein precedes the formation of a blood clot.

The study showed only a small difference between the right and left leg calf girths in the healthy men and very little difference in those of healthy women. However, a large difference was noted in calf leg girths in those patients with thrombophlebitis.

"Since thrombophlebitis may provide a source of potentially fatal pulmonary emboli or may herald occult malignant conditions, its early detection can be lifesaving," according to the authors. "It is generally agreed that calf measurement is an important diagnostic procedure.

"In neuromuscular diseases and those of bones or joints, clinical problems that involve bilateral differences in calf girth are also encountered. Bone or joint damage by disease or trauma may result in muscle atrophy detectable only by measurement. In poliomyelitis, arthritis, osteomyelitis and the muscular atrophies and dystrophies, such measurements can help diagnose current or previous disease, the extent of damage, and the progress of disease or therapy."

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(Continued from Page 64)

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Gross Urinary Hemorrhage Indicative Of Serious Disorder

A gross urinary hemorrhage demands an immediate physical examination to determine its cause. Even though the hemorrhage occurs only once and is not associated with pain, it should be considered indicative of a serious urinary lesion until proved otherwise, Drs. Leroy W. Lee and Edwin Davis, Jr., Omaha, wrote in a recent issue of the *Journal of the American Medical Association*.

"There is no more important single painless warning signal of disease than gross urinary hemorrhage, and it demands immediate urologic study to determine the cause and localization as soon as possible after onset," they stated.

"Gross urinary hemorrhage is a common symptom usually indicating urinary tract disease. The symptom of blood in the urine is frequently passed over by the patient without much concern. In most instances the bleeding subsides spontaneously and is forgotten until another episode occurs.

"When a patient comes for consultation because of painless bleeding, it is often difficult for the physician to insist on a complete urologic examination. Pain is not often a concurrent symptom in the most serious urinary diseases giving rise to bleeding. If patients realized how many persons die or have long periods of hospitalization because they waited for a second or third episode of bleeding before seeking special care, they would insist on immediate and complete urologic study."

The doctors reported on a study of 1,000 patients with the symptom of gross urinary hemorrhage. The patients ranged in age between 5 and 94 years; there were 666 males and 334 females. The time elapsing between the first occurrence of the hemorrhage and the patient's first consultation with a urologist varied from a few hours to as long as two years. In one-fifth of the patients, no pain or any other symptom was associated with the bleeding.

Two hundred and twenty patients were found to have cancer in the urinary tract—many of the cases so far advanced that correction was impossible.

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INDEX TO VOLUME 79, JULY-DECEMBER, 1953

AUTHOR INDEX

PAGE

A

Adelstein, Leo, *Los Angeles* ... 244

B

Barghausen, Dolores M., *Berkeley* ... 78
Bauer, Herbert, *Woodland* ... 422
Beeston, John, *Los Angeles* ... 25
Berne, Clarence J., *Los Angeles* ... 279
Blanche, Donald W., *Los Angeles* ... 20
Bogen, Emil, *Olive View* ... 16
Boone, Charles W., *Los Angeles* ... 420
Bruyn, Henry B., *Berkeley* ... 362
Bullock, Weldon K., *Los Angeles* ... 431
Burns, Edgar, *New Orleans* ... 207, 415
Butt, Edward M., *Los Angeles* ... 16

C

Cameron, Hamilton, *New York* ... 120
Chapman, W. Max, *Berkeley* ... 94
Chin, Roland, *Berkeley* ... 78
Comarr, A. Estin, *Long Beach* ... 315
Courville, Cyril B., *Los Angeles* ... 214
Cowper, H. H., *Los Angeles* ... 97
Cozen, Lewis, *Los Angeles* ... 40, 244
Crawfis, E. H., *Sacramento* ... 390

D

Dean, Ben H., *Berkeley* ... 84
Dickson, D. R., *Santa Barbara* ... 317
Drake, Robert M., *San Francisco* ... 1

E

Elek, Stephen R., *Los Angeles* ... 300
Emmett, J., *Los Angeles* ... 97
Epstein, Carl C., *Oakland* ... 406
Etheredge, S. N., *Oakland* ... 451

F

Feder, Bernard H., *Palos Verdes Estates* ... 293
Field, John B., *Los Angeles* ... 420
Fine, Irving, *Walnut Creek* ... 311
Finley, Knox H., *San Francisco* ... 94
Flocks, Milton, *San Francisco* ... 319
Fonda, Maxwell, *Los Angeles* ... 40
Freedland, Morris E., *Bellflower* ... 318
Fujimoto, Frances Y., *Berkeley* ... 78
Furman, Deane P., *Berkeley* ... 244

PAGE

G

Gardner, Richard E., *San Francisco* ... 105, 346
Garland, L. Henry, *San Francisco* ... 284
Gordon, Milton, *Bakersfield* ... 425
Graham, Hervey King, *San Diego* ... 240
Griffith, George C., *Los Angeles* ... 300

H

Hadley, G. Gordon, *Los Angeles* ... 431
Halverson, Wilton L., *San Francisco* ... 1
Harnagel, Edward E., *Los Angeles* ... 394
Harper, Harold A., *San Francisco* ... 105
Heaney, N. Sproat, *Beverly Hills* ... 103
Hedrick, Elvin C., *Port Orchard, Washington* ... 49
Henegar, George C., *Oakland* ... 386
Hinshaw, H. Corwin, *San Francisco* ... 282
Hirsch, Henry, *Bellflower* ... 318
Hollister, Arthur C., Jr., *Berkeley* ... 84
Hyman, Earl, *Beverly Hills* ... 103

I

Ingels, Arne E., *San Francisco* ... 437
Itatani, Margaret K., *Berkeley* ... 78

J

Jampolsky, Arthur, *San Francisco* ... 367
Jampolsky, Gerald, *San Francisco* ... 29
Jawetz, Ernest, *San Francisco* ... 99
Jennings, J. Kenneth, *Santa Barbara* ... 317
Jones, Margaret H., *Glendale* ... 357
Jonez, Hinton D., *Tacoma, Washington* ... 376

K

Kaplan, Joseph H., *Los Angeles* ... 231
Kaplan, Leo, *Los Angeles* ... 451
Kern, Richard A., *Philadelphia, Pa* ... 6, 274
Khlentzos, Constantine T., *San Francisco* ... 113
Kirtland, Howard B., Jr., *San Diego* ... 434
Kokernot, Robert H., *Berkeley* ... 73
Kroopf, Stanford S., *San Francisco* ... 36
Kummer, Jerome M., *Santa Monica* ... 31
Kupka, Edward, *Berkeley* ... 390
Kurland, Leonard T., *Rochester, Minn* ... 381

L

Lau, Francis Y. K., *Oakland* ... 114
Leeds, M. Frederick, *San Francisco* ... 36
Lennette, Edwin H., *Berkeley* ... 78, 362
Longshore, W. Allen, Jr., *Berkeley* ... 73, 84
Lucia, E. L., *San Francisco* ... 306

M

Manwaring, W. H., *Palo Alto* ... 324, 454
Martin, Purvis L., *San Diego* ... 108
Mason, Christopher, *Los Angeles* ... 244

KEY TO ABBREVIATIONS USED

(Or.)—Original Article; (Ed.)—Editorial; (CMA)—California Medical Association; (CR)—Case Report; (I)—Information; (LE)—Letters to the Editor.

May, Ivan A., *Oakland* 451
Mayer, Edgar, *New York, N. Y.* 332
Mayer, Henry, *Redwood City* 227
McCullough, C. P., *Riverside* 449
McNair, J. Douglas, *Los Angeles* 300
Merritt, John W., *San Diego* 108
Mitchell, Sidney P., *Palo Alto* 452
Molle, William E., *Los Angeles* 451
Moss, Arthur J., *Los Angeles* 5
Myers, Garth G., *New Orleans* 293
Myers, Orris R., *Eureka* 309

N

Neff, William B., *Redwood City* 227
Newman, Henry W., *San Francisco* 381
Nyberg, Marjorie, *Berkeley* 78

O

Oechsli, Waldo R., Los Angeles 390

P

Palmer, Bean M., *Oakland* 428
Payne, Robert D., *Klamath Falls* 425
Peck, Hyman, *Los Angeles* 405
Peters, Richard F., *Berkeley* 91
Pettit, William A., *Los Angeles* 42
Pillsbury, Stirling, *Long Beach* 343
Plachte, Frank L., *Beverly Hills* 353
Plunkett, Orda A., *Los Angeles* 233

R

Ray, Earl B., *Bellflower* 318
Roe, Benson B., *San Francisco* 11
Rosen, Edgar, *Oakland* 402
Rosenfeld, David D., *Fontana* 112

S

Sawyers, Thomas M., *Fontana* 112
Schaller, Walter F., *San Francisco* 370
Sherman, Samuel, *San Francisco* 265
Shevick, Irving M., *North Hollywood* 444
Shinefield, Henry R., *Berkeley* 73
Sisson, M. A., *San Francisco* 284
Slate, Thomas A., *San Diego* 108
Slater, Gregory S., *San Francisco* 450
Smith, Charles E., *Berkeley* 233
Smith, James K., *Oakland* 370
Snow, Willard G., *San Francisco* 211
Spaet, Theodore H., *San Francisco* 271
Spencer, William H., *San Francisco* 438
Stead, Frank, *San Francisco* 91
Stevens, Ida May, *Berkeley* 84

T

Talbott, John H., *Buffalo, N. Y.* 220
Tasem, Walter M., *Los Angeles* 231
Thomas, Nancy S., *San Francisco* 306
Thompson, Robert H., *Inglewood* 51

V

Van Meter, J. Ray, *San Francisco* 297

W

Watts, Malcolm S. M., *San Francisco* 306
Wilde, N. John, *Fresno* 218
Wilson, J. Walter, *Los Angeles* 233
Wood, George A., *Palo Alto* 452
Wood, George U., *Oakland* 61
Wylie, Edwin J., *San Francisco* 346

SUBJECT INDEX

A

Abortion: cf. Psychiatric Contraindications to Pregnancy, Jerome M. Kummer (Or.) 31
Abscess, Subdiaphragmatic, Diagnosis of, by Needle Biopsy of the Liver, William E. Molle and Leo Kaplan (CR) 451
Accident and Health Policy for C.M.A. Members (CMA) 325
ACTH (Corticotropin), and Cortisone—A Review, Edward E. Harnagel (Or.) 394
Allergic Aspects of Multiple Sclerosis, The, Hinton D. Jonez (Or.) 376
Allergic Patients, Management of—Practical Considerations, Richard A. Kern (Or.) 274
Annual Meeting, 1954, Preliminary Announcement for Papers and Exhibits (CMA) 202, 259, 328
Anoxemia and Brain Disease, Cyril B. Courville (Or.) 214
Antimicrobial Drugs, Advances in the Use of—Treatment of Infectious Diseases, H. Corwin Hinshaw (Or.) 282
Anxious Times in Tuberculosis, Edgar Mayer (I) 332
Appendiceal Stones Simulating Ureteral Calculi, Thomas M. Sawyers and David D. Rosenfeld (CR) 112
Appendix, Mucocele of the, Complicated by Torsion and Gangrene, D. R. Dickson and W. Kenneth Jennings (CR) 317
Arginase, The Treatment of Cancer with (CMA) 248
Arteriosclerosis, Peripheral—Present Concepts of Management, Edwin J. Wylie and Richard E. Gardner (Or.) 346
Arthritis, Gouty, Diagnosis and Treatment of, John H. Talbott (Or.) 220
Attitudes Toward Specific Therapies, Gerald Jampolsky (Or.) 29
Autopsy Reports of Pulmonary Carcinoma—Survey in Los Angeles County General Hospital for 1951, G. Gordon Hadley and Weldon K. Bullock (Or.) 431

B

Biological Warfare, John Beeston (Or.) 25
Biopsy, Needle, of the Liver, Diagnosis of Subdiaphragmatic Abscess by, William E. Molle and Leo Kaplan (CR) 451
Brain Disease, Anoxemia and, Cyril B. Courville (Or.) 214

C

Cancer, Cytologic Detection of—Four Years' Experience with Routine Smear Examination in Private Practice, Purvis L. Martin et al (Or.) 108
Carcinoma, Intraoral, Treatment of—Combined Resection of the Jaw and Radical Dissection of the Neck, N. John Wilde (Or.) 218
Carcinoma of the Esophagus, Recurrent, Resection of, Ivan A. May and S. N. Etheredge (CR) 451
Carcinoma, Pulmonary, Autopsy Reports of, Los Angeles County General Hospital for 1951, G. Gordon Hadley and Weldon K. Bullock (Or.) 431
Cardiovascular Disease Case Progress Index—A Means of Aiding Research and Supplying Teaching Material, Malcolm S. M. Watts, E. L. Lucia, and Nancy C. Thomas (Or.) 306
Cardiovascular System in Acute Infectious Disease, The, Irving Fine (Or.) 311
Cataract Operations, Prognosis in, William A. Pettit (Or.) 42

Cerebral Palsy, What's New in, Margaret H. Jones (Or.) 357
Children, Obstructive Urinary Tract Lesions in, Edgar Burns (Or.) 207
Cholecystitis and Cholelithiasis in a 16-year-old Boy, Henry Hirsch, Earl B. Ray, Morris E. Freedland (CR) 318
Chorionepithelioma Registry of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons (I) 334
C.M.A. House of Delegates Proceedings (CMA) 121
Coccidioidomycosis in San Fernando Valley—Report of a Study Carried Out in 1951-1952, H. H. Cowper and J. Emmett (Or.) 97
Coccidioidomycosis, Primary Cutaneous—The Criteria for Diagnosis and Report of a Case, J. Walter Wilson, Charles E. Smith, and Orda A. Plunkett (Or.) 233
"Collagen Diseases," Radiological Aspects of, L. Henry Garland and M. A. Sisson (Or.) 284
Conservative Therapy of Benign Uterine Bleeding—With Special Reference to the Use of Ergot, N. Sproat Heaney and Earl Hyman (Or.) 103
Controlled Technique for Vein Stripping, Milton Gordon, Bakersfield, and Robert D. Payne (Or.) 425
Coronary Artery Disease, Detection of—Exercise Test in Electrocardiography, M. Frederick Leeds and Stanford S. Kroopf (Or.) 36
Coronary Insufficiency Following Intravenous Pyelography, Carl C. Epstein (CR) 406
Cortisone and Corticotropin (ACTH)—A Review, Edward E. Harnagel (Or.) 394
C.P.S. Board, Hodges Heads (CMA) 57
Curare, The Sublingual Administration of, William B. Neff and Henry Mayer (Or.) 227
Cytologic Detection of Cervical Cancer—Four Years' Experience with Routine Smear Examination in Private Practice, Purvis L. Martin, Thomas A. Slate, and John W. Merritt (Or.) 108

D

Decubitus Ulcer, Extensive, of 31 Years' Duration, Repair of, A. Estin Comarr (CR) 315
Deformity, Flexion, of the Cervical Spine, Surgical Correction of, Christopher Mason, Lewis Cozen and Leo Adelstein (CR) 244
Deliveries, 14,501, with No Maternal Death, Stirling Pillsbury (Or.) 343
Determining Serum Bicarbonate—Simple Syringe Titrator and Colorimeter, Charles W. Boone and John B. Field (Or.) 420
Diagnosis and Treatment of Gouty Arthritis, John H. Talbott (Or.) 220
Diagnosis of Subdiaphragmatic Abscess by Needle Biopsy of Liver, William E. Molle and Leo Kaplan (CR) 451
Differential Diagnosis (of Encephalitis), Robert H. Kokernot, Henry R. Shinefield and W. Allen Longshore, Jr. (Or.) 73
Differential Diagnosis of Operable Disease of the Esophagus, Benson B. Roe (Or.) 11
Diseases and Deaths—A Statistical Survey of 40,130 Autopsies at the Los Angeles County General Hospital, 1918 to 1948—Part II, Emil Bogen and Edward M. Butt (Or.) 16

E

Electrocardiographic Changes Occurring with Trivalent Antimony Compounds During Therapy of Schistosomiasis, Francis Y. K. Lau (CR) 114
Electrocardiography, The Exercise Test in Detection of Coronary Artery Disease, M. Frederick Leeds and Stanford S. Kroopf (Or.) 36
Electrophoresis, Paper, Practical Applications of, Theodore H. Spaet (Or.) 271
Encephalitis, 1952 Outbreak in California, Symposium on 73 to 96
Encephalitis, Western Equine, in Infants, Henry B. Bruyn and Edwin H. Lennette (Or.) 362
Endocrinology, Pediatric, Frank L. Plachte (Or.) 353
Entozyme® in Treatment of Psoriasis, Arne E. Ingels (Or.) 437
Epidemiologic Aspects (of Encephalitis), Arthur C. Hollister, Jr., W. Allen Longshore, Jr., B. H. Dean, and Ida May Stevens (Or.) 84
Ergot, Conservative Treatment of Benign Uterine Bleeding with, N. Sproat Heaney and Earl Hyman (Or.) 103
Esophagus, Differential Diagnosis of Operable Disease of, Benson B. Roe (Or.) 11
Esophagus, Resection of Recurrent Carcinoma of, Ivan A. May and S. N. Etheredge (CR) 451
Exercise Test in Electrocardiography—Detection of Coronary Artery Disease, M. Frederick Leeds and Stanford S. Kroopf (Or.) 36
Eye, Pseudomonas Aeruginosa Infections of the, William H. Spencer (Or.) 438

F

Fat Emulsion as Dietary Supplement, Constantine Khlentzos (CR) 113
Foreign Bodies, Swallowed, Bernard H. Feder and Garth G. Myers (Or.) 293

G

Gamma Globulin—Status of Availability for Prevention of Poliomyelitis, Wilton L. Halverson and Robert M. Drake (Or.) 1
Gastrointestinal Tract, Rupture of (Non-Penetrating Trauma), Howard B. Kirtland (Or.) 434
General Practitioner in Industrial Medicine, The, Orris R. Myers (Or.) 309
Gouty Arthritis, Diagnosis and Treatment of, John H. Talbott (Or.) 220
Growing Problem of Suicide, The, Richard A. Kern (Or.) 6

H

Hand Talking Chart, Hamilton Cameron (LE) 120
Histamine Treatment of Multiple Sclerosis, James K. Smith and Walter F. Schaller (Or.) 370
Hodges Heads C.P.S. Board (CMA) 57
House of Delegates Proceedings (CMA) 121
Hypertension, Unilateral Renal Disease and, Edgar Burns (Or.) 415

I

Importance of Potassium after Operation, The, George C. Henegar (Or.) 386
Industrial Medicine, The General Practitioner in, Orris R. Myers (Or.) 309
Infectious Diseases, The Treatment of—Advances in the Use of Antimicrobial Drugs, H. Corwin Hinshaw (Or.) 282
Injuries of the Musculotendinous Cuff of the Shoulder, Donald W. Blanche (Or.) 20
Interim Session (Ed.) 409
Intraoral Carcinoma, Treatment of, N. John Wilde (Or.) 218

J

Jaw, Resection of: cf. Treatment of Intraoral Carcinoma, N. John Wilde (Or.) 218

L

Laboratory Methods for Etiologic Diagnosis (of Encephalitis), Edwin H. Lennette, Marjorie C. Nyberg, Dolores M. Barghausen, Roland Chin, Frances J. Fujimoto, and Margaret K. Itatani (Or.) 78
Laetrile (CMA) 326
Leiomyoma of the Prostate, 38th Reported Case of, "Polyp" of the Prostate Protruding into the Rectum, Gregory S. Slater (CR) 450

Lipoma, Unusual Scrotal, Associated with Sigmoid Diverticulum, Clifford P. McCullough (CR) 449
Long Term Neurologic and Psychiatric Studies of Sequelae (of Encephalitis), Knox H. Finley, and W. Max Chapman (Or.) 94

M

Management of Allergic Patients—Practical Considerations, Richard A. Kern (Or.) 274
Management of Strabismus, The, Arthur Jampolsky (Or.) 367
Mandibular Herpes Zoster with Geniculate Ganglion Symptoms and Response to Cortisone, Irving M. Shevick (Or.) 444
Maternal Death, 14,501 Deliveries with No, Stirling Pillsbury (Or.) 343
(Morrison, Arlo A.) The New President-Elect (CMA) .. 55
Mucocele of the Appendix Complicated by Torsion and Gangrene, D. R. Dickson and W. Kenneth Jennings (CR) 317
Multiple Sclerosis, Allergic Aspects of, Hinton D. Jonez (Or.) 376
Multiple Sclerosis, Histamine Treatment of, James K. Smith and Walter F. Schaller (Or.) 370
Multiple Sclerosis—Its Frequency and Distribution with Special Reference to San Francisco, Leonard T. Kurland and Henry W. Newman (Or.) 381
Muscular Dystrophy, Progressive—A Preliminary Report on Treatment with Amino Acids, Folic Acid and Vitamins, J. Ray Van Meter (Or.) 297

N

Nasal Myiasis Caused by the Primary Screw-Worm, Callitroga Hominivorax (Coquerel), Deane P. Furman (Or.) 244
Neck, Radical Dissection of: cf. Treatment of Intraoral Carcinoma, N. John Wilde (Or.) 218
Nephrogram Following Acute Myocardial Infarction, Hyman Peck (CR) 405
New Atmosphere (Ed.) 455
New Laws Affecting Medical Partnerships, Clinics, and Auxiliary "Hospitals" (I) 334
New President-Elect, The (Arlo A. Morrison) (CMA) 55
New Vaccination Certificates Issued for International Travel (I) 463
Nursing Services in Industry (CMA) 258

O

Obstructive Urinary Tract Lesions in Children, Edgar Burns (Or.) 207
Osteopathy and Medicine, Study of Relations Between—Report to the House of Delegates, A.M.A., June 1953 (I) 65
Overdue Accounts, Tactful Collection of (Ed.) 247

P

Palm Thorn Injuries, Lewis Cozen and Maxwell Fonda (Or.) 40
Pancreatitis, Traumatic, Clarence J. Berne (Or.) 279
Paroxysmal Tachycardia in Early Infancy—Report of a Case in which Large Doses of Quinidine Were Given, Arthur J. Moss and Robert H. Thompson (CR) 51
Past-Presidents of the California Medical Association (CMA) 56
Pediatric Endocrinology—Notes on Some Recent Advances, Frank L. Plachte (Or.) 353
Peripheral Arteriosclerosis—Present Concepts of the Management of, Edwin J. Wylie and Richard E. Gardner (Or.) 346
Phenylbutazone—An Evaluation of Its Use, Willard G. Snow (Or.) 211
Poliomyelitis, Status of Gamma Globulin for the Prevention of, Wilton L. Halverson and Robert M. Drake (Or.) 1
Poliomyelitis Viremia, W. H. Manwaring (LE) 324
"Polyp" of the Prostate Protruding into the Rectum, 38th Reported Case of Leiomyoma of the Prostate, Gregory S. Slater (CR) 450
Postoperative Parenteral Nutrition, Richard E. Gardner and Harold A. Harper (Or.) 105
Potassium, The Importance of, After Operation, George C. Henegar (Or.) 386
Practical Applications of Paper Electrophoresis, Theodore H. Spaet (Or.) 271
Pregnancy, Psychiatric Contraindications to, Jerome M. Kummer (Or.) 31
Prelude (Observations on C.M.A. Annual Meeting) (Ed.) 52
Present Status of Union Labor Health and Welfare Insurance Plans in the San Francisco Area, Samuel R. Sherman (I) 265
Primary Cutaneous Coccidioidomycosis—The Criteria for Diagnosis and Report of a Case, J. Walter Wilson, Charles E. Smith, and Orda A. Plunkett (Or.) 233
Proceedings, C.M.A. House of Delegates (CMA) 121
Prognosis in Cataract Operations—A Correlation of Preoperative Appraisal with Results, William A. Pettit (Or.) 42
Progressive Muscular Dystrophy—A Preliminary Report on Treatment with Amino Acids, Folic Acid and Vitamins, J. Ray Van Meter (Or.) 297
Proposed Constitutional Amendment (CMA) 257, 326
Prostate, "Polyp" of the, Protruding into the Rectum, Gregory S. Slater (CR) 450
Pseudomonas Aeruginosa Infections of the Eye, William H. Spencer (Or.) 438
Psoriasis, Entozyme® in the Treatment of, Arne E. Ingels (Or.) 437
Psychiatric Contraindications to Pregnancy—With Reference to Therapeutic Abortion and Sterilization, Jerome M. Kummer (Or.) 31
Pulmonary Paraffinoma Verified at Thoracotomy, George A. Wood and Sidney P. Mitchell (CR) 452
Pyelography, Intravenous, Coronary Insufficiency Following, Carl C. Epstein (CR) 406

Q

Quinidine, Treatment with Large Doses of—Paroxysmal Tachycardia in Early Infancy, Arthur J. Moss and Robert H. Thompson (CR) 51

R

Radiologic Aspects of "Collagen Diseases," L. Henry Garland and M. A. Sisson (Or.) 284
Relationships in Consultation, Hervey King Graham (Or.) 240
Removal of Stones from Low in the Ureter—A Report on an Improved Method, Bean M. Palmer (Or.) 428
Renal Disease, Unilateral, and Hypertension, Edgar Burns (Or.) 415
Repair of Extensive Decubitus Ulcer of 31 Years' Duration, A. Estin Comarr (CR) 315
Resection of Recurrent Carcinoma of Esophagus, Ivan A. May and S. N. Etheredge (CR) 451
Rupture of Gastrointestinal Tract—Dealing with Lesions Caused by Non-Penetrating Trauma, Howard B. Kirtland (Or.) 434

S

Screw-Worm, Primary, Callitroga Hominivorax, Nasal Myiasis Caused by the, Deane P. Furman (Or.) 244
Shoulder, Injuries of the Musculotendinous Cuff of the, Donald W. Blanche (Or.) 20
Simple Syringe Titrator and Colorimeter—Determining Serum Bicarbonate, Charles W. Boone and John B. Field (Or.) 420
(Socialized Medicine in England, Observations on)—Something for Nothing? George U. Wood, (I) 61
Something for Nothing? (Observations on Socialized Medicine in England), George U. Wood (I) 61
Spine, Cervical, Surgical Correction of Flexion Deformity of, Christopher Mason, Lewis Cozen, and Leo Adelstein (CR) 244

Stenosis of the Urethral Meatus in Boys, Joseph H. Kaplan and Walter M. Tasem (Or.) ... 231
Sterilization: cf. Psychiatric Contraindications to Pregnancy, Jerome M. Kummer (Or.) ... 31
Strabismus, The Management of, Arthur Jampolsky (Or.) ... 367
Streptokinase-Streptodornase Therapy of Sterile Post-Pneumonic Empyema of Long Standing, Edgar Rosen (CR) ... 402
Study of Relations Between Osteopathy and Medicine—Report to the House of Delegates of the American Medical Association, June, 1953 (I) ... 65
Sublingual Administration of Curare, The, William B. Neff and Henry Mayer (Or.) ... 227
Suicide and Public Health, Herbert Bauer (Or.) ... 422
Suicide, The Growing Problem of, Richard A. Kern (Or.) ... 6
Surgical Correction of Flexion Deformity of the Cervical Spine, Christopher Mason, Lewis Cozen and Leo Adelstein (CR) ... 244
Swallowed Foreign Bodies, Bernard H. Feder and Garth G. Myers (Or.) ... 293
Symposium on Encephalitis, The 1952 Outbreak ... 73 to 96

T

Tachycardia, Paroxysmal, in Early Infancy—Treatment with Large Doses of Quinidine, Arthur J. Moss and Robert H. Thompson (CR) ... 51
Tactful Collection of Overdue Accounts (Ed.) ... 247
Tetanus—Two Cases in Immunized Persons, Elvin C. Hedrick (CR) ... 49
Training or Work? (Ed.) ... 323
Traumatic Pancreatitis, Clarence J. Berne (Or.) ... 279
Treatment of Cancer with Arginase, The (CMA) ... 248
Treatment of Infectious Diseases—Advances in the Use of Antimicrobial Drugs, H. Corwin Hinshaw (Or.) ... 282
Treatment of Intraoral Carcinoma—Combined Resection of the Jaw and Radical Dissection of the Neck, N. John Wilde (Or.) ... 218
Trouble in Paradise (Ed.) ... 119
Tuberculosis Control in California Mental Hospitals—E. H. Crawfis, Edward Kupka, and Waldo R. Oechsli (Or.) ... 390
Tuberculous Lymphadenitis, Allergic Vasculitis and Phlyctenulosis, Milton Flocks (CR) ... 319

U

Unilateral Renal Disease and Hypertension, Edgar Burns (Or.) ... 415
Unknown Bactericidal Serum Factor, An, W. H. Manwaring (LE) ... 454
Unlawful Practice (Ed.) ... 118
Unusual Scrotal Lipoma Associated with Sigmoid Diverticulum, Clifford P. McCullough (CR) ... 449
Ureter, Removal of Stones from Low in the, Bean M. Palmer (Or.) ... 428
Ureteral Calculi, Appendiceal Stones Simulating, Thomas M. Sawyers and David D. Rosenfeld (CR) ... 112
Urethral Meatus, Stenosis of the, in Boys—Surgical Correction, Joseph H. Kaplan and Walter M. Tasem (Or.) ... 231
Urinary Tract Infections—Problems in Medical Management, Ernest Jawetz (Or.) ... 99
Urinary Tract, Obstructive Lesions, in Children, Edgar Burns (Or.) ... 207
Uterine Bleeding, Benign, Conservative Therapy of, (with Ergot), N. Sproat Heaney and Earl Hyman (Or.) ... 103

V

Vector Control Aspects (of Encephalitis), Frank M. Stead and Richard F. Peters (Or.) ... 91
Vein Stripping, A Controlled Technique for, Milton Gordon and Robert D. Payne (Or.) ... 425
Veratrum Viride—Hypotensive and Cardiac Effects of Intravenous Use, Stephen R. Elek, J. Douglas McNair, and George C. Griffith (Or.) ... 300

W

Western Equine Encephalitis in Infants—Report of Three Cases with Sequelae, Henry B. Bruyn and Edwin H. Lennette (Or.) ... 362
World's Greatest, The (Observations on A.M.A. Annual Meeting) (Ed.) ... 53
What's New in Cerebral Palsy, Margaret H. Jones (Or.) 357
What's New in Pediatrics—A Panel Discussion ... 353 to 369

EDITORIALS

Interim Session ... 409
New Atmosphere ... 425
Prelude (Observations on C.M.A. Annual Meeting) ... 52
Tactful Collection of Overdue Accounts ... 247
Training or Work? ... 323
Trouble in Paradise ... 119
Unlawful Practice ... 118
World's Greatest, The (Observations on A.M.A. Annual Meeting) ... 53

CALIFORNIA MEDICAL ASSOCIATION

Accident and Health Policy for C.M.A. Members ... 325
Annual Meeting, 1954, Preliminary Announcement for Papers and Exhibits ... 202, 259, 328
Council Meeting Minutes:
399th Meeting, May 23-27, 1953 ... 195
400th Meeting, May 28, 1953 ... 200
401st Meeting, July 25, 1953 ... 255
402nd Meeting, October 17, 1953 ... 456
Hodges Heads C.P.S. Board ... 57
House of Delegates Proceedings ... 121
New President-Elect, The ... 55
Nursing Services in Industry ... 258
Past-Presidents of the C.M.A. ... 56
Proposed Constitutional Amendment ... 257, 325
Treatment of Cancer with Arginase, The—Report of the Cancer Commission ... 248

INFORMATION

Anxious Times in Tuberculosis, Edgar Mayer, New York, N. Y. ... 332
Chorionepithelioma Registry of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons ... 334
New Laws Affecting Medical Partnerships, Clinics, and Auxiliary "Hospitals" ... 334
New Vaccination Certificates Issued for International Travel ... 463
Present Status of Union Labor Health and Welfare Insurance Plans in the San Francisco Area, Samuel R. Sherman, San Francisco ... 265
Something for Nothing?, George U. Wood, Oakland ... 61
Study of Relations Between Osteopathy and Medicine—Report to the House of Delegates of the A.M.A., June, 1953 ... 65

BOOK REVIEWS

Atlas of Surgical Exposures of the Extremities, An, *Banks and Laufman* ... 342
Atlas of the Commoner Skin Diseases, An—4th Ed., *Semon* ... 338
Basis of Clinical Neurology, The—3rd Ed., *Brock* ... 269
Bedside Diagnosis—2nd Ed., *Seward* ... 270
Child Development, *Martin and Stendler* ... 413
Ciba Collection of Medical Illustrations—Vol. I, Nervous System, *Netter* ... 337
Clinical Allergy, *Hansel* ... 205
Clinical Cardiology, *Massey* ... 338
Clinical Unipolar Electrocardiography, *Lipman and Massie* ... 465
Conception of Disease, The, *Riese* ... 413
Danger Signals, *Alvarez* ... 270

Dermatology in General Practice, *Swartz* 337
Diagnostic Tests in Neurology, *Wartenberg* 336
Differential Diagnosis of Common Diseases of the Eyeground, *Tower* 464
Direct Analysis, *Rosen* 206
Diseases of Children—2 Vols.—5th Ed., *Garrod, Batten and* Thursfield), *Moncrief and Evans* 338
Disorders of the Circulatory System, *N. Y. Academy of Medicine* 206
Diuretic Therapy, *Vogl* 336
Endocrinology in Clinical Practice, *Gordan and Lisser* 467
Epidemics in Colonial America, *Duffy* 464
Essential Urology—2nd Ed., *Colby* 466
Essentials of Medical Diagnosis, The—2nd Ed., *Horder and Gow* 270
Excerpta Medica—Cancer Section 342
Fool's Haven, *Cawley* 339
From the Workshop of Discoveries, *Loewi* 342
Gastric Cancer, *Iason* 206
Gold-Headed Cane, The (Macmichael), *Kerr* 341
Handbook of Treatment of Acute Poisoning, *Bensley and Joron* 339
Headaches, *Wolf and Wolff* 336
Heredity in Health and Mental Disorder, *Kallmann* 466
History of American Epidemiology, *Winslow et al* 269
How To Improve Your Sight, Rev. Ed., *Corbett* 337
Human Neuroanatomy—3rd Ed., *Strong and Elwyn* 468
Hypersplenism and Surgery of the Spleen, *Dameshek and Welch* 340
Influenza, *Stuart-Harris* 342
Living Brain, The, *Walter* 337
Low Sodium Cook Book, The, *Payne and Callahan* 340
Manual of Clinical Allergy, A, *Sheldon et al* 205
Mechanisms of Urologic Disease, *Davis* 465
Medical Schools in the United States at Mid-Century, *Deitrick and Berson* 467
Modern Treatment, *Smith and Wermer* 464
Monographs in Medicine, Series I, *Bean* 269
Multiple Myeloma, *Snapper et al* 414
Office Psychiatry, *Moench* 270
Ophthalmic Surgery—6th Rev. Ed., *Meller* 340
Pharynx, The, *Hollender* 205
Physical Diagnosis, *Walker* 414
Physical Examination of the Surgical Patient, The, *Dunphy and Botsford* 339
Physician in Atomic Defense, The, *Sears* 336
Poliomyelitis, *Russell* 339
Practical X-Ray Treatment, 4th Ed., *Erskine* 342
Principles and Methods of Physical Diagnosis, *Leopold* 341
Principles and Practice of Medicine, *Davidson* 270
Psychoanalysis, Man and Society, *Schilder* 206
Pulmonary Tuberculosis—3rd Ed., *Keers and Rigden* 468
Radiology of the Bones and Joints—5th Ed., *Brailsford* 467
Roentgen Diagnosis of the Heart and Great Vessels, *Zdansky* 465
Roentgen, Radium and Radioisotope Therapy, *Delario* 339
Rorschach Interpretation: Advanced Technique, *Phillips and Smith* 464
Scalp in Health and Disease, The, *Behrman* 341
Sectional Radiography of the Chest, *Kane* 342
Spleen Puncture, *Moeschlin* 340
Stress Incontinence in the Female, *Ullery* 466
Surgery of the Pancreas, *Cattell and Warren* 467
Sympathetic Control of Human Blood Vessels, *Barcroft and Swan* 337
Symptoms and Signs in Clinical Medicine, 5th Ed., *Chamberlain* 340
Textbook of Gynecology, *Brewer* 468
Textbook of Public Health—13th Ed., *Frazer* 468
Therapeutics in Internal Medicine, 2nd Ed., *Kyser* 414
Transactions of the American College of Cardiology, Vol. II, 1952, *Kisch* 342
Your Child and His Problems, *Teicher* 413

DEATHS

Abrons, Harry, June 4, 1953 260
Allen, Joseph R., May, 1953 57
Avery, John W., 1953 260
Bakewell, Benjamin, September 3, 1953 459
Bartlett, Alexander G., May 28, 1953 57
Beebe, Jay L., October 21, 1953 459
Black, Emil C., July 2, 1953 260
Blevins, William J., August 20, 1953 327
Bobbitt, James D., July 16, 1953 327
Briden, Vayle S., July 24, 1953 327
Briggs, Leroy H., June 29, 1953 201
Brooks, LeRoy, August 1, 1953 260
Brownell, Emily M. Baer, June 11, 1953 201
Burke, Donald W., July 8, 1953 260
Caster, John L., April 2, 1953 57
Clecak, Nicholas J., May 19, 1953 57
Coate, Charles R., May 28, 1953 57
Crandall, Frank G., Jr., August 25, 1953 327
Cuneo, Peter J., September 1, 1953 327
Derbyshire, Albert L., September 5, 1953 327
Dixon, Chester D., April 11, 1953 57
Duncan, Will C., September 24, 1953 459
Eames, Earl, May 1, 1953 57
Eikenberry, Kenneth W., July 15, 1953 260
Fergusson, Frederick W., September 5, 1953 459
Fidler, Albert J. E., June 12, 1953 327
Garrison, J. Frank, September 24, 1953 459
Ginsburg, Samuel S., May 8, 1953 57
Giordano-Cortese, Modesto, August 18, 1953 327
Glatt, Morris A., July 18, 1953 327
Gobar, Franklin H., October 17, 1953 459
Haig, Thomas R., July 13, 1953 260
Hannah, Ward, March 22, 1953 57
Hawkins, George C., April 16, 1953 57
Hershberger, Lloyd R., June 14, 1953 260
Howitt, Henry O., June 8, 1953 57
Huish, Frederic G., October 18, 1953 459
Ingalls, Albert T., May 1, 1953 260
Jacobson, Harry P., March 23, 1953 57
Johnson, Karl O., August 3, 1953 327
Kreutzmann, Henry A., April 28, 1953 58
Lang, John H., August 1, 1953 327
Lauder, Clark H., September 30, 1953 459
Lindsay, Harry C. L., September 9, 1953 459
Lipkis, Abram, August 18, 1953 327
Liva, Arcangelo, August 12, 1953 327
Marshall, Benjamin, August 10, 1953 327
Martin, Ross C., April 20, 1953 58
McIntosh, Arthur M., September 14, 1953 459
McKee, Charles B., May 29, 1953 58
McLarand, Kenneth C., April 15, 1953 58
Miller, John J., Jr., June 13, 1953 201
Montgomery, Robert R., May 2, 1953 58
Moore, Gertrude H., May 3, 1953 58
Nelson, Elford J., June 10, 1953 201
Newman, Lester, April 25, 1953 58
Nichols, Robert C., March 29, 1953 58
Oppenheimer, Arnold, August 20, 1953 459
Peters, Charles E., August 1, 1953 459
Pischel, Kaspar, April 9, 1953 58
Prichard, Marvin C., May 5, 1953 58
Robinson, Shelby L. Boynton, August 18, 1953 459
Sargent, William H., July 29, 1953 260
Silverberg, Morris, April 17, 1953 58
Smith, Loren E., August 23, 1953 327
Sornsen, Antone A., 1953 459
Steele, Edson H., June 23, 1953 201
Stevens, George M., September 22, 1953 459
Stewart, John N., July 18, 1953 260
Stout, Gurn T., September 13, 1953 459
Tarpinian, Haroutune A., April 28, 1953 58
Taylor, Leland H., September 21, 1953 459
Turner, Henry C., July 19, 1953 327
Valens, John D., October 7, 1953 459
Vaught, John L., October 18, 1953 459
Wellman, Orand F., August 5, 1953 327
Westphal, Henry G., September 2, 1953 327
Whalen, John A., March 27, 1953 260
Whalen, John F., July 4, 1953 201